Baseline Outlook
Missouri Representative Farms

April 2007

Food and Agricultural
Policy Research Institute
FAPRI
College of Agriculture, Food and Natural Resources

FAPRI - UMC Report #04-07

www.fapri.missouri.edu
(573) 882-3576

Published by the Food and Agricultural Policy Research Institute (FAPRI) at The University of Missouri–Columbia, 101 Park DeVille Suite E; Columbia, MO 65203 in April 2007.

http://www.fapri.missouri.edu

Material in this publication is based upon work supported by the Cooperative State Research, Education and Extension Service; United States Department of Agriculture, under Agreement No. 2006-34228-16979.

Any opinion, findings, conclusions, or recommendations expressed in this publication are those of the authors and do not necessarily reflect the view of the US Department of Agriculture.

Executive Summary

This report highlights financial information for specific types of Missouri farm operations, based on the best economic intelligence available. Results are generated by a network of models that estimate economic variables from world trade to the US agricultural sector to farm specific financial performance. This report follows up on work presented in the US Baseline Briefing Book released in March 2007 as FAPRI-UMC Report #02-07.

The impacts of biofuels on Missouri agricultural producers are readily apparent in these results. The five-year outlook for the representative feedgrain-soybean farms has never looked as promising. With normal yields, even small to mid-sized farms are expected to generate a level of family income that surpasses anything seen in at least a generation. In most cases, 2007 net returns, projected at trend yields, are as good or better than they were in 2004—a year when exceptional yields combined with grain marketing opportunities and program payments. The difference now is that a higher level of net returns is expected for several successive years. These farms are very likely to build cash or equivalent value assets.

On the other hand, the outlook for grain farms does not look as dramatic as one might conclude from a less comprehensive analysis. Ever higher costs and the disappearance of counter-cyclical payments and marketing loan benefits begin to dampen annual net returns by the end of the five-year outlook.

Alternatively, livestock farms—beef, dairy, and pork—show signs of strain in the near and intermediate future. Higher feed costs are just part of the story for these farms. The price outlook for the beef and hog markets is also responsible for high risk ratings on cow-calf and farrow-to-finish farms. For the hog farms, net returns in the next two years are very likely to be negative, depending on the farm's current debt position.

This set of beef (and dairy) representative farms is weighted heavily to southern Missouri where recent drought and hard winter has had a measurable financial impact. Net returns on these farms in 2005 and 2006 were less than prices might imply. Beef, seed, and hay production suffered. Cash reserves heading into the projection period are reduced relative to what they would have been with normal weather and historically strong beef prices. These factors combined with the bearish feeder cattle price outlook are worrisome for the cow-calf representative farms. This report shows beef farms earning negative returns within two to four years and rapidly depleting cash reserves. Beef price impacts are also observed on the diversified crop-beef farms which face considerably more cash flow risk than crop farms with no direct ties to the beef markets.

Although milk prices are now improving, the dairy farms have suffered recently from higher feed costs and weather related production problems. This baseline assumes that a counter-cyclical program like the milk income loss contract (MILC) is not in place in the future. This has been an important support to the representative dairy farms. For example, the 2006 payment on a 110 cow dairy—operating with high efficiency—was equivalent to one-third of the net returns. The farm drew $13,600 in that year resulting in returns to family living of just under $41,000. With higher feed costs and the absence of a MILC program the baseline cash risk outlook for the dairy farms is the highest we have measured.

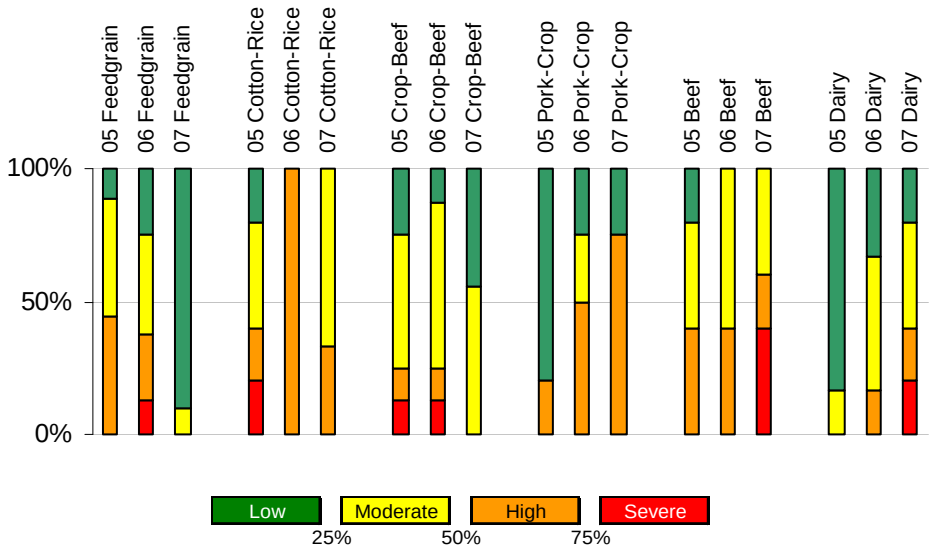
No summary of farm financial outlook is complete without mentioning the progressive run up in some input costs that only moderated in 2006. For example, in early 2007, reports were coming in of record nitrogen prices. Management embedded in the analysis, based on our experience with producers, is often able to compensate for some reported cost increases. However, input cost pressure permeates this analysis and has measurable impacts.

The increasing costs of controlling land are also part of the analysis. We would not be surprised if future land costs turn out to be higher than current projections.

One method of summarizing the outlook is with risk classifications based on the probability of cash flow deficit. We use four categories of risk in this report: low, moderate, high, and severe. The figures below compare baseline projections over time. Regard previous baselines as a point of reference for how new information about the future has impacted the outlook.

Relative to the previous two baseline projections, cash risk classifications for the near term (2007 and 2008 for this baseline) have improved for farms in the feedgrain-soy group, the cotton and rice group, and the crop-beef group. The outlook has worsened for the pork-crop, beef, and dairy groups.

Figure 1. Baseline comparisons for the nearby two-year outlook period.
Cash deficit risk by farm type grouping



Similar changes in cash risk are observed for the farms looking out three to five years, as shown in Figure 2.

Figure 2. Baseline comparisons for three-year intermediate outlook period.
Cash deficit risk by farm type grouping

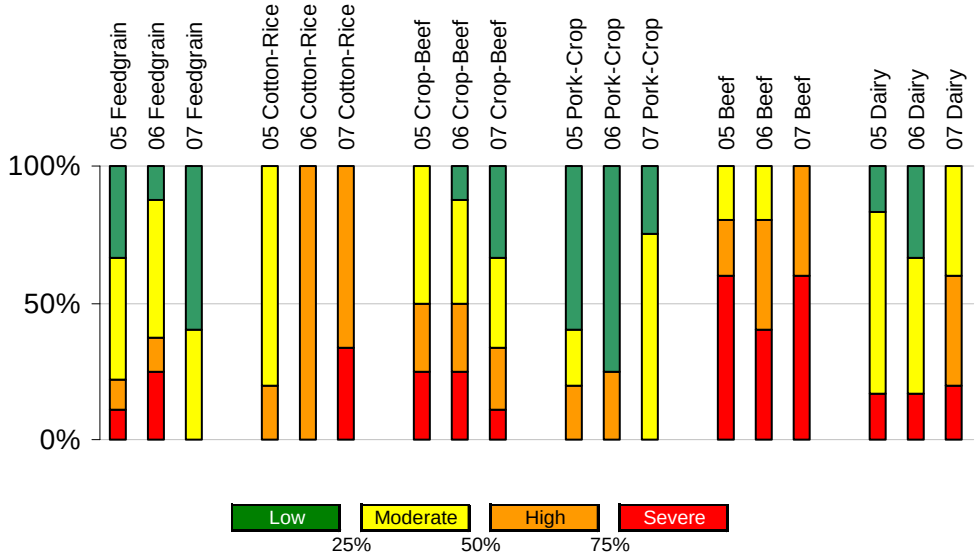
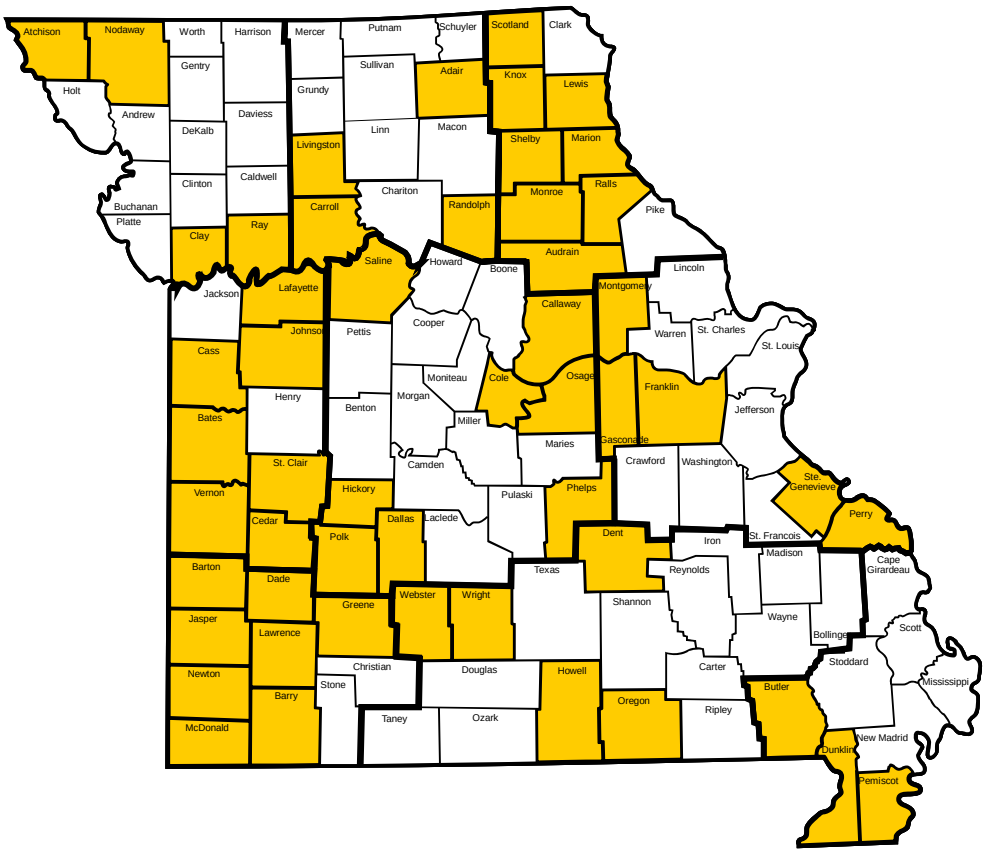


Table of Contents

Appendices

Missouri Representative Farm Locations

Shaded areas of the map indicate the home counties of panel members. Bolded lines are boundaries for USDA-Missouri Agricultural Statistics Service crop reporting districts which correspond with representative farm regions in this report.



Acknowledgement

This work would not be possible without the excellent cooperation we receive from over 200 panel members and facilitators who voluntarily participate. We are grateful for their dedication to this project.

Reader's Guide

This report presents the five-year outlook for 38 Missouri representative farms under provisions of current policy. Throughout this report, farms are identified by number and grouped by primary sources of income. Findings are based on a number of important assumptions as discussed in Appendix A. Different assumptions will yield a different financial outlook. It is important to acknowledge that each farm is a unique entity. Use caution when comparing results across farms.

The baseline outlook simulates financial performance over eight calendar years. The historical period includes 2004-06. Projections are for the years 2007-2011.

Individual farms are described in the tables that begin on page 8. Farm reference numbers are shown at the top of each column for easy identification. Production and size characteristics are shown on the left page and financial statistics for the same farms are listed on the right page. Several items have footnotes that are explained in the table reference notes on page 38. The tables for each farm type group are preceded by a synopsis with specific points highlighted for all of the farms.

Like Missouri production agriculture, representative farms are of various types and sizes. Table 1 shows the range in sizes for each grouping. In terms of 2006 receipts, representative farms range in size from $119,000 (a 150 cow beef farm) to $4,578,000 (a 1500 sow farrow-to-finish farm). One-quarter of the farm set fits the definition of a small farm as suggested by the USDA with less than $250,000 in agricultural product sales.

To find results by region rather than farm type, refer to Table 2 for a geographical sort. Regions correspond to Missouri Ag Statistics Service cropping districts, as shown on the previous page.

Table 1. Overview of the Missouri representative farm set, 2007

Farm Type	Number of Farms	Cropped Acres		Livestock		Receipts ($1000)		Oper. Assets ($1000)	
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Feedgrain-soy	10	890	3,630	0	0	$239	$1,293	$1,085	$6,654
Cotton and rice	3	1,600	4,000	0	0	$630	$2,041	$1,109	$9,325
Crop-beef	9	655	2,955	40 cows	250 cows	$201	$859	$1,018	$4,843
Pork-crop	4	0	1,015	200 sows	1500 sows	$323	$4,578	$1,654	$5,682
Beef	5	650	2,125	150 cows	400 cows	$119	$279	$1,523	$3,380
Dairy	5	332	625	85 cows	400 cows	$247	$1,260	$1,413	$3,840
Broiler-beef	2	200	225	4 houses	6 houses	$146	$208	$965	$1,010
All farms	**38**	**0**	**4,000**			**$119**	**$4,578**	**$965**	**$9,325**

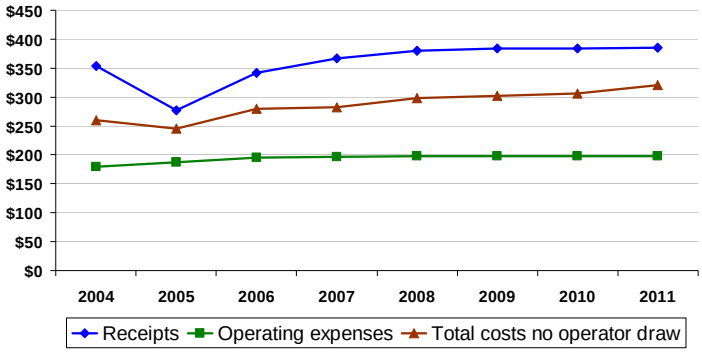
Table 2. Representative farm identification numbers, by region

Farm Type	North West	North Central	North East	West Central	Central	East Central	South West	South Central	South East
Feedgrain-soy	1, 2	3, 4, 5	6, 7, 8	9			10		
Cotton and rice									11, 12 13
Crop-beef	14	15	16, 17	18		19, 20	21, 22		
Pork-crop			23	24	25, 26				
Beef					27		28, 29	30, 31	
Dairy						32	33, 34 35, 36		
Broiler-beef							37, 38		
Regional count	3	4	6	3	3	3	11	2	3

Summary of Feedgrain-soy Farms

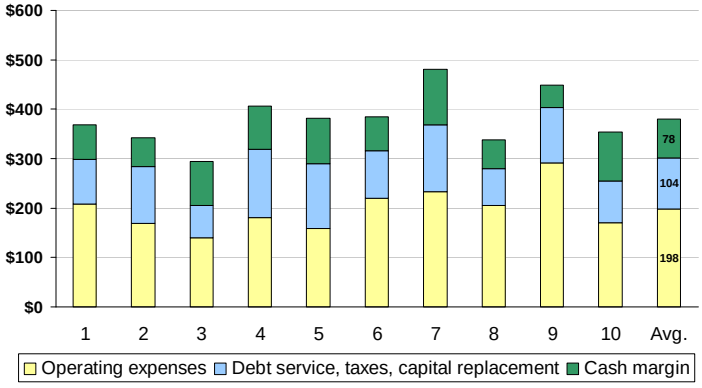
- Uneven historical yield and price impacts are observed in the receipts line.
- Projected cash margins—net returns before operator withdrawal—are strong in the outlook, but begin to narrow after 2007.
- The largest average cash margin, $94 per acre, occurred in 2004.

Costs and returns per acre, all feedgrain farms



- Average annual operator receipts for this group of farms range from $294 per acre for the smallest farm—a farm with substantial acreage enrolled in conservation programs—to $480 per acre for a moderate sized farm with relatively few cropshare acres.
- Higher margins per acre are not necessarily related to lower costs per acre.

Average projected costs and returns per acre, by farm



- Cash flow risk ratings, which account for some weather risk, are the lowest ever projected for farms in this grouping.

Cash flow risk ratings, by farm

Farm	Region	Crop acres	2006-07	2008-2010
1	NW	2500		
2	NW	2300		
3	NC	890		
4	NC	2050		
5	NC	3630		
6	NE	2600		
7	NE	2300		
8	NW	1300		
9	WC	1800		
10	SW	1100		

Low | Moderate | High | Severe

25% 50% 75%

Feedgrain-soy Farm Spotlights

Farm 1
This Northwest farm plants 2500 acres of corn and soybeans in a 50-50 rotation. After years of low yields, the last three years have put this farm on a firm financial footing. Entering 2007, the farm has cash reserves equivalent to 82 percent of operating expenses. Given the corn and soybean price outlook, this farm is projected to earn a healthy income with relatively low risk.

Farm 2
This Missouri River bottom farm crops 2300 acres, with 39 percent of the land crop shared. About two-thirds of the acres are in soybeans with some double cropping, plus corn and some wheat. The greatest risk to this farm may be the mandated spring rise on the Missouri River.

Farm 3
This farm crops 700 acres of corn, soybeans, and wheat, mostly on hill ground in Carroll County. An additional 190 acres are enrolled in various Conservation Reserve Program practices for wildlife conservation and water quality protection. With poor yields in 2005, the farm did not meet all cash requirements. However, the outlook indicates the farm is expected to return an average of $79,000 with low to moderate risk.

Farms 4 and 5
These two Carroll County farms are similar in most respects except for the number of acres farmed—2050 and 3630 acres. The smaller farm, Farm 4, has slightly higher capital expenses per acre. Farm 5 is both the largest and most efficient of the feedgrain-soy group in terms of the expense to receipts ratio. Strong price projections result in strong cash positions for both of these farms.

Farm 6
This 2600 acre farm in Northeast Missouri posted record breaking yields and returns in 2004. The 2005 drought cancelled much of their good fortune. With trend yield and projected prices, returns to family living are expected to be quite strong with low risk of cash flow deficits.

Farm 7
This Northeast farm crops 2300 acres in a 50 percent corn, 50 percent soybean rotation. With half of the acres controlled with a cash lease, future cash lease rates are a major concern. The 2005 drought hurt yields, but returns were positive. The farm is quite efficient in terms of the expense to receipts ratio.

Farm 8
This Northeast farm with 1300 crop acres raises corn, sorghum, and soybeans. Like the other Northeast farms, yield extremes were experienced in back-to-back years. For this farm with fairly high operating expenses relative to receipts, risk increases over the projection period.

Farm 9
This Lafayette County farm crops corn and soybeans on 1800 acres and owns specialized equipment for custom spraying. Added revenue does not cover the additional equipment and labor costs to support the custom business. Yields have been under trend the last two years, but the farm is projected to meet cash needs with moderate risk.

Farm 10
This 1100 acre farm in Barton County, one of the smallest farms in the feedgrain-soy group, operates in a grain deficit area and receives a premium price for corn due to area poultry and swine feeding demand. Over time, growers have reduced sorghum acres in favor of corn. Below average yields in 2005 and 2006 were difficult, but not disastrous. With trend yields the farm generates over $100,000 annual returns in the outlook period.

Table 3. **Feedgrain-soy** farms, characteristics

Code	NWFG2500	NWFG2300	NCFG890	NCFG2050	NCFG3630
Farm number	**1**	**2**	**3**	**4**	**5**
Region	Northwest	Northwest	North Central	North Central	North Central
County	Atchison	Ray	Carroll	Carroll	Carroll
Land base					
Cropland	**2500**	**2300**	**890**	**2050**	**3630**
Acres owned	1050	1380	565	1150	1600
Acres leased	1450	920	325	900	2030
Nonproductive acres owned	150	68	85	80	160
Total acres operated	2650	2368	975	2130	3790
Operator owned (%)	46	61	67	58	46
Cash leased (%)	25			8	
Share leased (%)	29	39	33	34	54
Cash receipt sources [a]					
Share of total					
All crops (%)	100	100	100	100	100
Custom work (%)					
Planted acres [b]					
Total planted acres	**2500**	**2500**	**990**	**2050**	**3630**
Double cropped acres		200	100		
Share of total planted acres					
Corn (%)	50	28	30	50	52
Sorghum (%)					
Wheat (%)		8	10		3
Soybeans (%)	50	64	41	50	45
Conservation reserve (%)			19		
Crop yields [c]					
Corn, bu					
2004	186	184	173	185	203
2005	173	174	135	145	177
2006	152	176	158	170	185
Sorghum, bu					
2004					
2005					
2006					
Wheat, bu					
2004		66	58		60
2005		60	70		77
2006		68	71		55
Soybeans, bu					
2004	49	48	43	53	53
2005	51	47	43	49	49
2006	42	39	42	49	51

Table 3. **Feedgrain-soy** farms, financial outlook (continued).

Code	NWFG2500	NWFG2300	NCFG890	NCFG2050	NCFG3630
Farm number	1	2	3	4	5
Near term cash risk outlook [d]	Low	Low	Low	Low	Low
Intermediate term cash risk outlook	Low	Low	Moderate	Low	Low
Average operator assets ($1000)	5,603	7,396	1,658	6,234	8,656
Average return to operator assets (%)	9.9	8.9	8.1	10.7	12.4
Assumed operator debt, Jan 1, 2004 (%) [e]	20	20	20	20	20
Term debt capacity, Jan 1, 2007 (%) [f]	40	31	32	41	51
Cropland value in 2004 ($ per acre)	2,250	2,705	1,135	2,525	2,254
Average operating expense/receipts (%)	59.8	51.1	49.0	46.3	43.4
Government payments ($1000) [g]					
2004	100.5	66.9	25.6	85.0	137.2
2005	152.7	88.9	33.7	115.4	201.7
2006	62.3	43.1	17.5	56.1	83.2
2007	65.2	59.2	18.6	56.6	89.5
2008	67.7	61.4	19.0	57.9	91.5
2009	68.5	61.7	18.9	58.3	92.0
2010	69.3	60.9	19.1	59.5	93.9
2011	69.5	61.8	19.3	60.0	94.8
Average	68.1	61.0	19.0	58.4	92.3
Total cash receipts ($1000) [a]					
2004	880.5	707.5	225.0	693.1	1,143.7
2005	829.8	654.3	193.7	586.0	1,019.1
2006	867.0	732.4	239.3	782.1	1,293.3
2007	891.2	757.6	254.0	801.2	1,338.0
2008	922.4	787.7	260.8	828.3	1,380.8
2009	927.9	795.8	264.7	849.1	1,415.3
2010	930.2	798.0	264.5	835.2	1,392.6
2011	934.2	801.1	266.3	845.7	1,411.0
Average	921.2	788.0	262.1	831.9	1,387.5
Net cash farm income ($1000) [h]					
2004	400.0	353.0	109.6	352.1	628.5
2005	328.4	269.7	72.4	236.1	476.2
2006	353.3	349.7	113.9	418.1	727.1
2007	378.2	373.7	127.5	437.8	768.8
2008	399.5	402.4	133.8	452.3	802.7
2009	405.2	404.2	140.0	476.6	835.2
2010	403.4	408.4	141.1	466.4	811.8
2011	409.4	405.6	145.0	477.4	830.8
Average	399.1	398.9	137.5	462.1	809.9
Return to family living ($1000) [i]					
2004	222.5	148.5	66.4	189.0	295.6
2005	164.5	87.5	30.8	96.8	197.3
2006	172.4	114.8	57.8	186.4	293.7
2007	193.6	152.6	83.5	206.5	348.3
2008	183.0	158.1	83.4	163.5	346.8
2009	186.5	145.1	79.8	187.9	353.8
2010	162.0	127.3	77.1	178.2	325.2
2011	147.5	88.1	73.5	159.6	315.1
Average	174.5	134.2	79.4	179.1	337.8
Average owner withdrawal assumed ($1000) [j]	51.0	51.0	52.3	52.3	69.0
Beginning cash, 2007 ($1000) [k]	422.24	214.7	12.04	337.61	604.99
Beginning cash/operating expenses (%) [k]	82.3	55.9	9.5	92.9	106.3
Probability of a cash flow deficit (%) [l]					
2007	13.2	4.4	12.8	1.8	1.0
2008	17.4	4.4	17.2	8.8	1.0
2009	16.6	7.0	19.2	2.8	1.0
2010	19.8	9.6	24.8	5.2	1.0
2011	22.0	20.0	29.2	9.0	3.0

See table reference notes on page 38.

Table 3. **Feedgrain-soy** farms, characteristics (continued)

Code	NEFG2600	NEFG2300	NEFG1300	WCFG1800	SWFG1100
Farm number	**6**	**7**	**8**	**9**	**10**
Region	Northeast	Northeast	Northeast	West Central	Southwest
County	Marion	Knox	Audrain	Lafayette	Barton
Land base					
Cropland	**2600**	**2300**	**1300**	**1800**	**1100**
Acres owned	936	920	390	875	360
Acres leased	1664	1380	910	925	740
Nonproductive acres owned	70	50	40	197	41
Total acres operated	2670	2350	1340	1997	1141
Operator owned (%)	38	41	32	53	36
Cash leased (%)	41	50	34	31	32
Share leased (%)	21	9	34	16	32
Cash receipt sources [a]					
Share of total					
All crops (%)	100	100	100	95	100
Custom work (%)				5	
Planted acres [b]					
Total acres	**2600**	**2300**	**1300**	**1800**	**1485**
Double cropped acres					365
Share of total planted acres					
Corn (%)	48	50	25	50	18
Sorghum (%)			18		8
Wheat (%)	4				25
Soybeans (%)	48	50	57	50	49
Crop yields [c]					
Corn, bu					
2004	205	184	170	192	170
2005	80	99	60	138	110
2006	150	152	147	133	127
Sorghum, bu					
2004			140		135
2005			85		78
2006			115		99
Wheat, bu					
2004	55				50
2005	58			65	52
2006	65			59	18
Soybeans, bu					
2004	61	51	50	58	44
2005	36	50	37	48	36
2006	45	48	44	42	15

Table 3. **Feedgrain-soy** farms, financial outlook (continued).

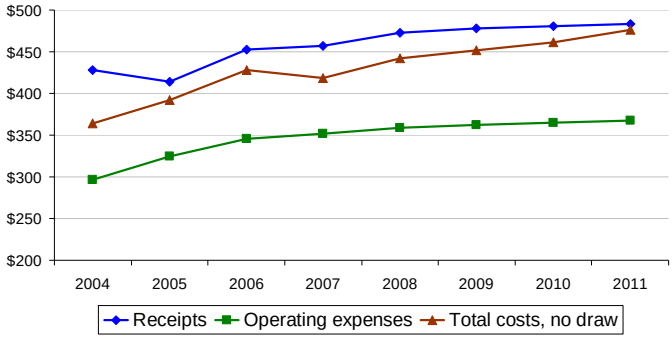
Code	NEFG2600	NEFG2300	NEFG1300	WCFG1800	SWFG1100
Farm number	**6**	**7**	**8**	**9**	**10**
Near term cash risk outlook [d]	Low	Low	Low	Moderate	Low
Intermediate term cash risk outlook	Moderate	Low	Moderate	Moderate	Low
Average operator assets ($1000)	4,806	5,120	2,137	6,252	1,484
Average return to operator assets (%)	11.6	13.5	10.4	7.5	13.2
Assumed operator debt, Jan 1, 2004 (%) [e]	20	20	20	20	20
Term debt capacity, Jan 1, 2007 (%) [f]	49	64	51	29	85
Cropland value in 2004 ($ per acre)	2,164	1,967	2,350	2,900	1,207
Average operating expense/receipts (%)	60.7	52.1	61.8	67.7	49.2
Government payments ($1000) [g]					
2004	117.5	108.8	52.4	58.3	37.7
2005	116.4	123.5	53.4	101.5	37.9
2006	71.3	138.6	28.7	51.4	47.0
2007	70.3	71.3	36.1	57.4	30.8
2008	72.9	74.0	37.5	61.0	30.7
2009	74.4	75.6	37.4	61.0	30.8
2010	76.0	77.4	37.2	62.1	30.4
2011	75.3	76.6	37.7	61.9	30.5
Average	73.8	75.0	37.2	60.7	30.7
Total cash receipts ($1000) [a]					
2004	1,071.2	962.4	417.3	843.6	391.9
2005	566.2	760.4	261.7	622.5	296.2
2006	958.8	1,040.0	414.5	663.9	256.2
2007	969.0	1,068.4	421.3	783.5	377.0
2008	1,003.8	1,107.4	438.0	809.7	386.8
2009	1,007.8	1,111.3	443.9	815.4	392.4
2010	1,010.3	1,114.1	444.6	815.4	395.3
2011	1,013.5	1,117.4	446.7	817.3	395.5
Average	1,000.9	1,103.7	438.9	808.3	389.4
Net cash farm income ($1000) [h]					
2004	544.5	464.0	170.3	396.9	227.7
2005	32.0	240.7	11.4	144.7	122.6
2006	388.7	506.1	148.1	153.4	74.8
2007	400.1	536.1	153.6	262.0	192.1
2008	432.8	572.7	170.8	286.2	201.9
2009	438.3	575.1	177.7	289.4	208.2
2010	439.0	574.5	180.5	291.4	209.7
2011	443.8	578.3	181.1	292.6	201.6
Average	430.8	567.3	172.7	284.3	202.7
Return to family living ($1000) [i]					
2004	286.1	254.5	92.4	208.9	142.6
2005	-54.3	110.1	-32.9	30.4	61.2
2006	204.5	230.1	78.3	9.5	17.2
2007	188.9	267.9	84.4	100.8	113.8
2008	179.5	262.2	84.2	99.6	115.5
2009	180.4	256.9	82.5	82.7	124.3
2010	175.9	252.1	78.2	68.7	119.9
2011	172.5	244.3	48.9	57.1	73.8
Average	179.5	256.7	75.7	81.8	109.5
Average owner withdrawal assumed ($1000) [j]	51.0	51.0	28.3	45.3	39.6
Beginning cash, 2007 ($1000) [k]	300.0	459.4	60.6	128.0	115.2
Beginning cash/operating expenses (%) [k]	52.7	86.3	22.6	24.5	62.3
Probability of a cash flow deficit (%) [l]					
2007	20.6	1.0	6.2	29.6	2.0
2008	24.4	3.0	5.6	30.2	2.6
2009	25.6	7.0	9.6	33.6	1.0
2010	24.8	10.4	10.0	37.2	2.8
2011	24.6	15.0	33.8	41.0	23.2

See table reference notes on page 38.

Summary of Cotton and Rice Farms

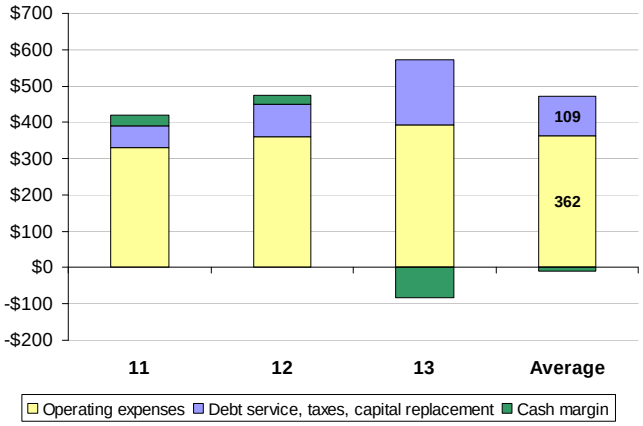
- Receipts on this 2000 acre farm improved in 2006 on the strength of higher rice prices.
- Farm receipts are expected to maintain strength in the outlook period primarily due to corn and soybean prices.
- Operating expenses are up $50 per acre from 2004 to 2006 and are projected to continue climbing, but at a slower pace.

Costs and returns per acre, Farm 12
2000 Ac Rice-Soybeans-Corn-Wheat



- Projected costs and returns result in a positive margin for two of the farms in this category—an average net cash return of $27 per acre on $447 per acre receipts.
- For farm 13, all costs per acre are relatively higher. On average, the farm has a negative cash margin.

Average projected costs and returns per acre, by farm



- The cotton-rice farms continue to operate with a high level of risk.
- The 4000 acre rice-soybean farm is not sustainable as currently configured.

Cash flow risk ratings, by farm

Farm num	Region	Crop acres	2006-07	2008-2010
11	SE	1600 CR		
12	SE	2000 R		
13	SE	4000 R		

Low 25% Moderate 50% High 75% Severe

Cotton and Rice Farm Spotlights

Farm 11
This 1600 acre Pemiscot County farm irrigates cotton, soybeans, and rice and raises dryland cotton, soybeans and sorghum. Ninety percent of the acreage is leased. Cotton is planted on 42 percent of the acres, but makes up 57 percent of the farm receipts. The farm owns a cotton stripper, but all other harvest is custom hired. Whole farm projected operating costs averages $331 per crop acre.

Farm 12
This 2000 acre farm in Butler County strives to maintain some diversity in the crop mix. Soybeans account for almost one-half of planted acres. Conventional and hybrid rice varieties are planted on over one-third of the acres. Corn and wheat is planted on 16 percent of the cropped acres. All wheat acres are double cropped. Whole farm operating cost averages $361 per crop acre.

Farm 13
This 4000 acre Butler County farm plants rice and soybeans on an equal number of acres. Rice provides 70 percent of the total farm receipts. Costs outpace receipts in the projection period. After 2007, the accumulated reserve is spent and farm debt begins to climb. Whole farm operating costs averages $394 per crop acre.

Table 4. **Cotton and rice** farms, characteristics

Code	SECT1600	SERC2000	SERC4000
Farm number	**11**	**12**	**13**
Region	Southeast	Southeast	Southeast
County	Pemiscot	Butler	Butler
Land base			
Cropland	**1600**	**2000**	**4000**
Acres owned	160	800	2000
Acres leased	1440	1200	2000
Nonproductive acres owned	8	40	100
Total acres operated	1608	2040	4100
Operator owned (%)	10	41	52
Cash leased (%)	9	15	24
Share leased (%)	81	44	24
Cash receipt sources [a]			
Share of total			
All crops (%)	100	100	100
Custom work (%)			
Planted acres [b]			
Total acres planted	**1600**	**2100**	**4000**
Double cropped acres		100	
Share of total planted acres			
Cotton (%)	42		
Rice (%)	17	36	50
Corn (%)		7	
Sorghum (%)	3		
Wheat (%)		9	
Soybeans (%)	38	48	50
Crop yields [c]			
Cotton, lbs			
2004	1125 1125 irr		
2005	1031 1031 irr		
2006	978 978 irr		
Rice, cwt			
2004	68.0	68.4	71.1
2005	66.0	66.0	73.0
2006	66.0	66.0	72.0
Corn, bu			
2004		180	
2005		164	
2006		167	
Sorghum, bu			
2004	100		
2005	100		
2006	101		
Wheat, bu			
2004		60	
2005		60	
2006		56	
Soybeans, bu			
2004	38 51 irr	50	51
2005	25 51 irr	46	50
2006	25 50 irr	45	47

Table 4. **Cotton and rice** farms, financial outlook (continued).

Code	SECT1600	SERC2000	SERC4000
Farm number	**11**	**12**	**13**
Near term cash risk outlook [d]	Moderate	Moderate	High
Intermediate term cash risk outlook	High	High	Severe
Average operator assets ($1000)	1,192	4,453	10,968
Average return to operator assets (%)	8.8	7.2	6.0
Assumed operator debt, Jan 1, 2004 (%) [e]	20	20	20
Term debt capacity, Jan 1, 2007 (%) [f]	57	33	29
Cropland value in 2004 ($ per acre)	1,500	2,269	2,182
Average operating expense/receipts (%)	81.8	78.0	85.8
Average government payments/receipts (%)	14.7	11.3	15.4
Government payments ($1000) [g]			
2004	171.5	126.0	302.9
2005	151.8	145.3	357.3
2006	126.1	76.6	220.6
2007	109.5	100.3	282.4
2008	99.2	113.3	324.4
2009	89.2	104.9	297.5
2010	83.3	97.1	269.6
2011	81.8	95.3	262.0
Average	92.6	102.2	287.2
Total cash receipts ($1000) [a]			
2004	658.6	856.3	1,763.0
2005	647.3	827.2	1,790.4
2006	630.5	905.7	2,041.3
2007	648.7	914.7	1,873.0
2008	666.7	945.7	1,957.6
2009	671.7	956.4	1,979.4
2010	680.2	960.5	1,981.4
2011	683.9	966.2	1,992.7
Average	670.2	948.7	1,956.8
Net cash farm income ($1000) [h]			
2004	250.9	263.6	541.3
2005	172.9	177.9	408.4
2006	117.6	215.2	546.6
2007	127.3	211.5	353.4
2008	137.8	227.7	396.6
2009	141.1	232.4	396.9
2010	147.5	231.4	385.3
2011	149.6	231.4	385.2
Average	140.7	226.9	383.5
Return to family living ($1000) [i]			
2004	169.0	127.6	249.6
2005	73.0	42.7	51.4
2006	25.7	48.9	45.4
2007	42.7	78.0	-85.5
2008	40.6	62.2	-207.5
2009	30.2	53.3	-333.4
2010	63.1	37.2	-451.5
2011	57.7	13.1	-570.0
Average	46.9	48.8	-329.6
Average owner withdrawal assumed ($1000) [j]	45.3	45.3	45.3
Beginning cash, 2007 ($1000) [k]	145.8	95.7	226.6
Beginning cash/operating expenses (%) [k]	28.0	13.6	14.9
Probability of a cash flow deficit (%) [l]			
2007	46.0	31.6	55.0
2008	48.6	36.6	64.4
2009	52.8	42.0	74.4
2010	37.2	48.4	77.0
2011	41.4	56.2	80.0

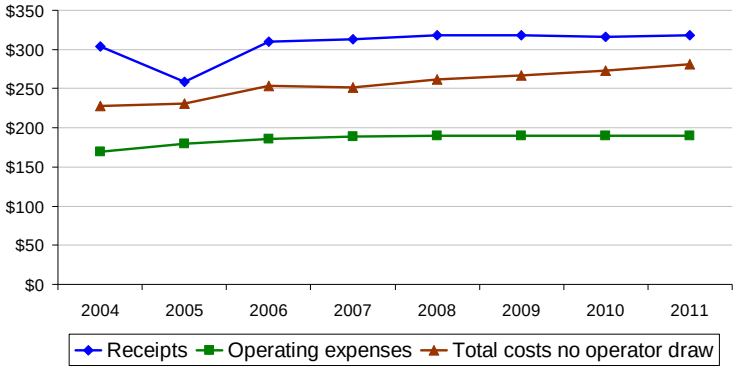
See table reference notes on page 38.

Summary of Crop-beef Farms

- Historical yield impacts are apparent in receipts. For the projection period, grain prices and trend yields hold receipts at relatively high levels.

- Average margins decline from $61 per acre in 2007 to $37 per acre in 2007.

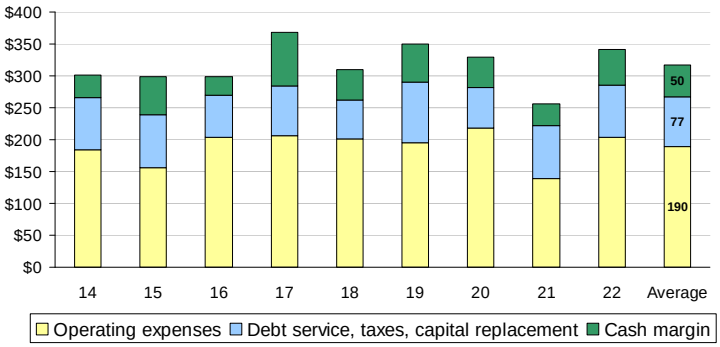
Costs and returns per acre, all crop-beef farms



- Average cash margins for this set of farms range from $33 to $84, with an average of $50 per acre.

- There is little relationship between operating costs per acre and cash margin.

Average projected costs and returns per acre, by farm (cropped and forage acres)



- The grain price outlook has improved risk ratings for this set of farms. However, relative to the set of feedgrain-soy farms, it is apparent that the beef enterprises contribute to higher risk in this outlook.

Cash flow risk ratings, by farm

Farm	Region	Crop acres	Cows	2006-07	2008-2010
14	NW	1850	200 + Bk		
15	NC	1485	100		
16	NE	1460	80 + Bk		
17	NE	500	50 + Bk		
18	WC	1400	150 + Bk		
19	EC	380	40		
20	EC	1500	130 + Bk		
21	SW	240	250		
22	SW	1800	150 + Bk		

Low | Moderate | High | Severe

25% 50% 75%

Crop-beef Farm Spotlights

Farm 14
This Northwest farm plants 1850 acres to corn and soybeans. It also runs a cow-calf enterprise with 200 cows. In 2004, the farm recovered from back to back droughts and generated strong returns again in 2005. Despite strong grain prices, higher costs and lower beef prices keep this farm at moderate cash flow risk. Positive, but low, returns are expected in years of large machinery replacements.

Farm 15
This Livingston County farm plants 1485 acres and earns just 11 percent of receipts from a 100 cow beef herd. Ten percent of crop acres are in the CRP and Wetland Reserve Programs. Yields were below average in 2005, creating an essentially break-even year. At trend yields and strong soybean prices, the farm builds cash reserves in the projection period.

Farm 16
This Northeast farm raises corn, soybeans and wheat on 1460 acres and runs 80 beef cows. Half of the farm is leased. Corn yields were pathetic in 2005 producing a cash deficit for the business. At trend yields, the business has the capacity to provide a modest family living, but is expected to face liquidity issues in the intermediate term.

Farm 17
This Northeast farm is one of the smaller farms in the dataset with 500 acres of row crops and 50 beef cows. The 2005 drought cut the cash reserve in half. At trend yields and strong grain prices the contribution to family income from the business is expected to average about $52,000.

Farm 18
This Bates County farm earns 79 percent of receipts from the 1400 crop acres. In addition, the business runs 150 beef cows and backgrounds all offspring. The farm maintains a relatively high stocking rate due to a heavy fertility program. The outlook is for annual average returns over $75,000.

Farm 19
This Perry County diversified farm crops 380 acres and raises calves from 40 beef cows on 190 acres of forage. Grass seed sales are a major contributor to income. Higher grain prices have improved the outlook for this farm. At trend yields, the farm will support the planned withdrawal of $28,000.

Farm 20
This Perry County farm crops 1500 acres of hill ground and Mississippi River bottomland. Labor is primarily from family sources. Machinery could be characterized as “depreciated-out.” Almost one-third the value of sales comes from the 130 cow beef herd and the 100 acres of alfalfa raised for the horse market. The outlook is for positive, but declining returns.

Farm 21
This Dade County farm crops 240 acres, but earns the majority of its income from the 250-cow beef herd. Corn, wheat and soybean yields are well below the national averages. The farm generates income in support of the planned owner withdrawal until 2010. Lumpy replacement of crop machinery is responsible for the steep loss in 2010.

Farm 22
This Barton County farm crops 1800 acres in addition to raising and backgrounding calves from 150 beef cows. Two center pivots allow the farm to irrigate corn and soybeans. With double cropping, 2400 acres are harvested. Projected returns to family living are positive and fairly consistent.

Table 5. **Crop-beef** farms, characteristics

Code	NWCB1850	NCCB1485	NECB1460	NECB500
Farm number	**14**	**15**	**16**	**17**
Region	Northwest	North Central	Northeast	Northeast
County	Nodaway	Livingston	Monroe	Audrain
Land base				
Cropland	**1850**	**1485**	**1460**	**500**
Acres owned	950	975	730	250
Acres leased	900	510	730	250
Forages	**1000**	**340**	**400**	**120**
Acres owned	600	155	132	120
Acres leased	400	185	268	
Nonproductive acres owned	140	70	86	35
Total acres operated	2990	1895	1946	655
Operator owned (%)	56	64	49	62
Cash leased (%)	17	23	36	38
Share leased (%)	27	13	15	
Beef enterprise				
Mature beef cows (hd)	**200**	**100**	**80**	**50**
Cattle backgrounded (hd)	146		70	35
Cash receipt sources [a]				
Share of total				
Crops (%)	80	89	89	87
Beef (%)	18	11	11	13
Hay and/or seed (%)	1			
Custom work (%)	1			
Planted acres [b]				
Total acres planted	**2850**	**1825**	**1916**	**655**
Double cropped acres			56	35
Share of total planted acres				
Corn (%)	32	18	30	25
Sorghum (%)				8
Wheat (%)		5	7	4
Soybeans (%)	32	49	42	44
Hay and/or seed (%)	7	5	4	8
Improved pasture (%)	28	13	17	11
Conservation reserve (%)	1	10		
Crop yields [c]				
Corn, bu				
2004	190	175	175	169
2005	180	115	62	40
2006	165	140	119	145
Sorghum, bu				
2004				149
2005				85
2006				120
Wheat, bu				
2004		60	60	48
2005		62	61	65
2006		72	75	52
Soybeans, bu				
2004	55	60	57	61
2005	60	42	28	30
2006	47	43	47	46

Table 5. **Crop-beef** farms, financial outlook (continued).

Code	NWCB1850	NCCB1485	NECB1460	NECB500
Farm number	**14**	**15**	**16**	**17**
Near term cash risk outlook [d]	Moderate	Low	Moderate	Low
Intermediate term cash risk outlook	Moderate	Moderate	High	Low
Average operator assets ($1000)	6,034	4,227	3,564	1,667
Average return to operator assets (%)	8.5	7.7	7.6	8.2
Assumed operator debt Jan 1, 2004 (%) [e]	20	20	20	20
Term debt capacity Jan 1, 2007 (%) [f]	34	38	31	36
Cropland value in 2004 ($ per acre)	2,250	1,700	1,892	2,350
Average operating expense/receipts (%)	64.6	53.7	71.4	58.1
Average government payments/receipts (%)	6.7	7.3	8.0	7.8
Government payments ($1000) [g]				
2004	80.3	37.1	57.1	22.8
2005	123.5	43.9	54.3	20.4
2006	51.1	25.5	36.1	13.1
2007	50.8	35.3	40.0	15.9
2008	53.1	36.8	41.2	16.6
2009	53.9	36.8	41.4	16.7
2010	55.4	37.1	40.6	16.5
2011	55.1	37.8	41.9	16.7
Average	53.7	36.8	41.0	16.5
Total cash receipts ($1000) [a]				
2004	851.5	474.7	587.0	234.5
2005	821.6	420.3	347.6	145.9
2006	858.9	512.9	515.4	224.2
2007	845.8	527.5	542.7	223.7
2008	862.9	546.5	556.8	229.9
2009	860.5	550.9	559.7	229.6
2010	857.0	547.7	558.1	229.4
2011	862.9	550.9	559.0	229.5
Average	857.8	544.7	555.3	228.4
Net cash farm income ($1000) [h]				
2004	378.4	216.9	261.5	112.8
2005	325.9	151.2	3.7	21.2
2006	353.4	233.3	148.8	95.6
2007	333.7	246.7	169.2	93.6
2008	343.9	259.9	177.6	99.9
2009	328.3	266.5	180.3	103.2
2010	327.2	261.3	175.4	102.4
2011	335.6	266.4	181.6	102.5
Average	333.7	260.2	176.8	100.3
Return to family living ($1000) [i]				
2004	191.1	133.4	154.0	68.7
2005	151.4	70.9	-61.0	-9.6
2006	152.5	113.2	68.9	46.0
2007	125.7	140.6	78.4	53.8
2008	140.6	115.2	69.2	53.3
2009	46.6	118.2	59.7	58.6
2010	103.0	93.9	33.3	52.0
2011	76.8	77.5	25.3	42.7
Average	98.5	109.1	53.2	52.1
Average owner withdrawal assumed ($1000) [j]	39.6	51.0	37.4	17.0
Beginning cash, 2007 ($1000) [k]	388.4	179.9	60.9	58.9
Beginning cash/operating expenses (%) [k]	75.8	64.1	16.3	45.3
Probability of a cash flow deficit (%) [l]				
2007	26.6	4.0	30.0	12.2
2008	23.2	15.0	34.8	12.6
2009	44.0	14.2	37.0	11.4
2010	30.4	24.0	48.8	15.6
2011	37.2	32.4	52.8	21.6

See table reference notes on page 38.

Table 5. **Crop-beef** farms, characteristics (continued)

Code	WCCB1400	ECCB380	ECCB1500	SWCB240	SWCB1800
Farm number	**18**	**19**	**20**	**21**	**22**
Region	West Central	East Central	East Central	Southwest	Southwest
County	Bates	Perry	Perry	Dade	Barton
Land base					
Cropland	**1400**	**380**	**1500**	**240**	**1800**
Acres owned	530	120	500	175	1350
Acres leased	870	260	1000	65	450
Forages	**440**	**190**	**550**	**850**	**555**
Acres owned	220	65	250	570	500
Acres leased	220	125	300	280	55
Nonproductive acres owned	80	25	100	10	30
Total acres operated	1920	595	2150	1100	2385
Operator owned (%)	43	35	40	69	79
Cash leased (%)	34	45	12	25	2
Share leased (%)	23	20	48	6	19
Beef enterprise					
Mature beef cows (hd)	**150**	**40**	**130**	**250**	**150**
Cattle backgrounded (hd)	124		110		100
Cash receipt sources [a]					
Share of total					
Crops (%)	79	69	71	29	85
Beef (%)	21	12	11	64	15
Hay and/or seed (%)		17	16	7	
Custom work (%)		2	2		
Planted acres [b]					
Total acres planted	**2180**	**750**	**2200**	**1348**	**2955**
Double cropped acres	340	180	150	258	600
Share of total planted acres					
Corn (%)	24	17	23	9	16
Sorghum (%)				2	9
Wheat (%)	16	11	9	5	21
Soybeans (%)	40	28	10	10	38
Hay and/or seed (%)	5	37	39	24	3
Improved pasture (%)	15	7	19	50	13
Crop yields [c]					
Corn, bu					
2004	158	159	160	128	161 210 irr
2005	115	146	133	35	91 190 irr
2006	139	140	148	111	130 196 irr
Sorghum, bu					
2004				75	145
2005				43	72
2006				58	65
Wheat, bu					
2004	60	53	53	50	50
2005	54	55	52	50	63
2006	53	58	44	37	26
Soybeans, bu					
2004	48	50	49	24	45 48 irr
2005	39	40	48	22	37 60 irr
2006	38	40	47	21	15 38 irr

Table 5. **Crop-beef** farms, financial outlook (continued).

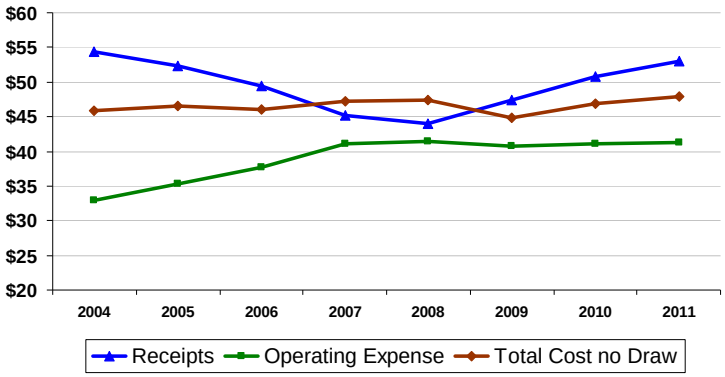
Code	WCCB1400	ECCB380	ECCB1500	SWCB240	SWCB1800
Farm number	**18**	**19**	**20**	**21**	**22**
Near term cash risk outlook [d]	Moderate	Moderate	Low	Moderate	Low
Intermediate term cash risk outlook	Low	High	Moderate	Severe	Low
Average operator assets ($1000)	3,083	1,223	4,077	2,670	4,444
Average return to operator assets (%)	7.2	7.1	8.4	5.0	10.1
Assumed operator debt Jan 1, 2004 (%) [e]	20	20	20	20	21
Term debt capacity, Jan 1, 2007 (%) [f]	37	38	29	20	43
Cropland value in 2004 ($ per acre)	1,779	2,500	2,194	1,533	1,248
Average operating expense/receipts (%)	66.8	56.9	71.4	55.7	61.3
Average government payments/receipts (%)	7.7	5.9	6.9	2.7	8.0
Government payments ($1000) [g]					
2004	50.4	13.2	49.0	8.3	78.6
2005	62.0	17.3	63.3	8.2	88.7
2006	112.7	8.6	34.0	5.4	146.4
2007	41.5	10.8	41.6	5.5	61.8
2008	41.1	11.4	43.3	5.7	61.2
2009	41.1	11.4	43.0	5.7	61.1
2010	40.9	11.2	42.1	5.7	61.4
2011	41.5	11.4	43.3	5.7	60.5
Average	41.3	11.2	42.7	5.6	61.2
Total cash receipts ($1000) [a]					
2004	541.2	184.6	587.2	211.1	772.4
2005	515.6	177.0	554.9	207.7	661.0
2006	638.3	201.3	656.6	226.8	658.7
2007	559.2	197.2	662.1	225.4	789.7
2008	569.4	199.5	676.6	218.6	801.9
2009	571.9	200.7	676.9	213.2	805.9
2010	570.4	199.6	678.0	206.7	805.3
2011	573.6	201.3	679.7	209.6	813.3
Average	568.9	199.6	674.7	214.7	803.2
Net cash farm income ($1000) [h]					
2004	211.7	87.5	185.0	107.2	355.9
2005	164.6	70.8	127.1	95.7	213.0
2006	272.5	93.7	219.7	113.8	190.4
2007	189.3	86.2	219.1	109.7	312.3
2008	197.0	89.1	230.5	104.3	319.4
2009	200.5	88.4	230.4	97.5	326.3
2010	199.9	89.2	231.3	88.9	327.7
2011	202.4	90.3	225.4	90.8	337.6
Average	197.8	88.7	227.3	98.2	324.7
Return to family living ($1000) [i]					
2004	112.5	51.7	96.2	56.8	193.9
2005	70.1	33.6	49.8	41.0	94.7
2006	133.8	42.6	101.6	50.0	60.2
2007	81.7	41.5	118.6	51.7	143.0
2008	74.8	37.5	110.1	44.9	126.0
2009	102.5	32.7	100.6	34.6	129.8
2010	95.0	30.9	93.0	-1.1	132.4
2011	81.1	27.6	62.4	9.0	118.8
Average	87.0	34.0	97.0	27.8	130.0
Average owner withdrawal assumed ($1000) [j]	37.4	28.3	45.3	34.0	45.3
Beginning cash, 2007 ($1000) [k]	216.0	50.7	124.7	55.1	226.9
Beginning cash/operating expenses (%) [k]	58.4	45.7	28.2	47.6	47.5
Probability of a cash flow deficit (%) [l]					
2007	19.6	19.8	18.8	18.6	11.8
2008	26.2	28.6	21.0	27.8	16.0
2009	13.4	40.6	24.4	47.2	14.2
2010	15.6	42.2	24.4	95.0	16.2
2011	21.4	53.2	33.4	83.4	17.6

See table reference notes on page 38.

Summary of Pork-crop Farms

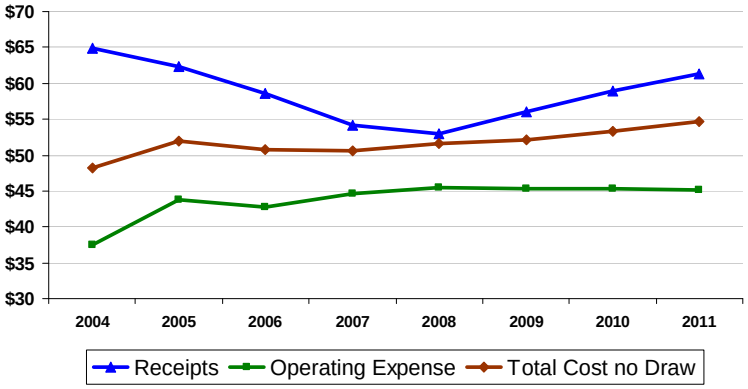
- Cyclical prices and the impacts of higher feed costs are glaring for the farrow-to-finish pork farms.
- Cash margins are projected to be negative in 2007 and 2008, but improve with higher hog prices and debt retirement in 2009.
- Average returns for the five-year outlook period are $1.22 per cwt. of pork sold.

Farrow-finish costs and returns per cwt.
Average of 1250 and 1500 sow farms



- Costs and receipt patterns are similar for this more diversified farm that earns over 80% of receipts from a 200 sow herd.
- Returns narrow, but stay positive through low hog prices.
- Farm returns are volatile with an annual average of $46,000 over the projection period.

Whole farm costs and returns per cwt.
Hog-Beef-Crop farm with 200 sows



- The Pork-crop farms are highly likely to experience cash deficits in the near term. The exception is the diversified farm raising nursery pigs in two houses on a contract basis.

Cash flow risk ratings, by farm

Farm	Region	Crop acres	Hogs	2006-07	2008-2010
23	NE	0	1500 FF		
24	WC	550	2 Nurs + 70 B		
25	CT	250	200 FF + 125 B		
26	CT	0	1250 FF		

Low | Moderate | High | Severe

25% 50% 75%

Pork-crop Farm Spotlights

Special assumptions for the Pork—crop farms
Modern swine production requires major investments in facilities. To appropriately model this investment over the eight year simulation, ten year swine housing loans are intentionally set to expire at the end of 2008. This allows for observation of projections in two phases of the business.

The period of principal and interest payments on facilities occurs in 2004-08, and the post-loan phase occurs in 2009-2011. Other adjustments, such as building related depreciation, repairs, and equipment replacement are similarly modeled as if the buildings came online at the beginning of 1999. This assumption, like debt assumptions on all the representative farms, is made irrespective of when the panel members actually made their initial investment in facilities.

Farm 23
This Northeast farm is strictly in the business of raising hogs in a multi-site 1500 sow farrow-to-finish operation. The baseline farm simulates an operation that retires the initial debt for facilities at the end of 2008. Negative returns are expected in 2007 and 2008, a period of high feed prices, low hog prices, and debt reduction. The farm begins to rebuild cash in 2009 with a projected improvement in hog prices and retirement of debt. Over the simulation, returns are cyclical ranging from a negative $257,000 to $820,000.

Farm 24
This is a diverse farm with 550 acres of row crops, a 70 cow beef herd and a two house contract nursery pig enterprise built in the mid 1990s. A relatively high level of remaining debt (30 percent) is assumed to begin the simulation in 2004. The pig enterprise provides strong risk protection from prices and production. Cash flow is relatively steady, producing approximately $76,000 per year in returns to family living during the period of building liability. This analysis assumes stable contract arrangements and relatively slow declines in housing asset values due to demand for pig space.

Farm 25
This farm is a traditional, diversified operation in the river hills of Osage County. Primary income is from the 200-sow farrow-to-finish unit. Sow productivity is relatively high, but little gain has occurred in the last few years. The farm also has a 125-cow beef herd and raises 225 acres of corn, sorghum, and wheat that is fed on the farm. With 20 percent initial debt, the simulation projects a farm that is able to provide a modest family living. Cash flow planning over multiple years is very important as returns are quite variable.

Farm 26
This representative farm reflects a farrow-to-finish operation of 1250 sows, located in the central region. Production technology efficiencies and costs per unit are similar, but not identical to farm 23. Annual cash expenditures exceed $3.0 million. Years of financial struggling, some severe, paid off in 2004 and 2005. In 2007 and 2008—a period of high feed costs, low hog prices, and the final years of debt service on facilities—the farm experiences cash deficits, losing approximately $480,000. The remainder of the projection is for this farm to build wealth with relatively low cash flow risk.

Table 6. **Pork-crop** farms, characteristics

Code	NEH1500	WCHBC550	CTHBC250	CTH1250
Farm number	**23**	**24**	**25**	**26**
Region	Northeast	West Central	Central	Central
County	Monroe	Vernon	Osage	Saline
Land base				
Cropland		**550**	**250**	
Acres owned		225	163	
Acres leased		325	87	
Forages		**285**	**330**	
Acres owned		215	215	
Acres leased		70	115	
Nonproductive acres owned	200	22	220	160
Total acres operated	200	857	800	160
Operator owned (%)	100	54	75	100
Cash leased (%)		27	13	
Share leased (%)		19	12	
Livestock enterprises				
Pork production unit type	Farrow-finish	Nursery	Farrow-finish	Farrow-finish
Number of sows	1500		200	1250
Number of pigs sold per year	33,120	32,000	4,045	26,450
Mature beef cows (hd)		**70**	**125**	
Cattle backgrounded (hd)				
Cattle fed (hd)				
Cash receipt sources [a]				
Share of total				
Pork (%)	100	41	83	100
Beef (%)		15	13	
Crops (%)		44	6	
Custom work (%)				
Planted acres [b]				
Total acres planted		**1015**	**605**	
Double cropped acres		180	25	
Share of total planted acres				
Corn (%)		17	29	
Sorghum (%)		8	4	
Wheat (%)		16	4	
Soybeans (%)		34	8	
Hay and/or seed (%)		6	17	
Improved pasture (%)		19	38	
Crop yields [c]				
Corn, bu				
2004		160	172	
2005		152	94	
2006		120	129	
Sorghum, bu				
2004		115	80	
2005		78	76	
2006		none	82	
Wheat, bu				
2004		55	50	
2005		70	50	
2006		30	49	
Soybeans, bu				
2004		45	45	
2005		42	42	
2006		16	43	

Table 6. **Pork-crop** farms, financial outlook (continued).

Code	NEH1500	WCHBC550	CTHBC250	CTH1250
Farm number	**23**	**24**	**25**	**26**
Near term cash risk outlook [d]	High	Low	High	High
Intermediate term cash risk outlook	Moderate	Low	Moderate	Moderate
Average operator assets ($1000)	5,591	1,968	3,050	4,215
Average return to operator assets (%)	5.8	8.5	4.3	2.6
Assumed operator debt in 2004 (%) [e]	50	30	20	40
Term debt capacity, Jan 1, 2007 (%) [f]	55	44	15	42
Cropland value in 2004 ($ per acre)	1,420	1,658	2,000	1,500
Average operating expense/receipts (%)	103.5	44.3	84.2	118.4
Average government payments/receipts (%)	0.0	4.9	1.6	0.0
Government payments ($1000) [g]				
2004	0.0	19.5	16.2	0.0
2005	0.0	26.1	18.8	0.0
2006	0.0	34.5	9.3	0.0
2007	0.0	16.9	8.6	0.0
2008	0.0	16.7	8.9	0.0
2009	0.0	16.6	8.9	0.0
2010	0.0	16.5	8.9	0.0
2011	0.0	16.7	9.0	0.0
Average	0.0	16.7	8.9	0.0
Total cash receipts ($1000) [a]				
2004	5,021.8	339.9	711.5	4,063.0
2005	4,850.0	355.8	683.7	3,884.9
2006	4,578.1	324.0	642.6	3,670.1
2007	4,184.7	348.7	593.2	3,353.8
2008	4,080.2	350.8	579.6	3,270.5
2009	4,398.4	351.5	613.4	3,523.4
2010	4,710.3	350.6	645.7	3,771.3
2011	4,911.1	351.6	671.8	3,930.5
Average	4,456.9	350.6	620.7	3,569.9
Net cash farm income ($1000) [h]				
2004	2,016.7	190.0	300.1	1,575.8
2005	1,631.0	192.8	204.9	1,224.0
2006	1,138.1	169.5	174.1	837.8
2007	419.5	192.2	104.8	264.5
2008	277.7	195.8	82.2	150.9
2009	667.1	199.2	116.4	454.9
2010	950.6	199.4	149.4	669.1
2011	1,157.0	199.6	177.3	818.6
Average	694.4	197.2	126.0	471.6
Return to family living ($1000) [i]				
2004	820.5	87.6	182.5	623.7
2005	564.6	80.4	114.7	405.6
2006	337.6	55.4	85.8	223.7
2007	-147.2	84.3	38.3	-181.3
2008	-257.6	76.3	15.0	-299.1
2009	324.9	138.2	43.3	121.1
2010	443.2	132.0	62.4	225.1
2011	553.4	122.6	73.0	309.6
Average	183.4	110.7	46.4	35.1
Average owner withdrawal assumed ($1000) [j]	77.0	49.8	45.3	77.0
Beginning cash, 2007 ($1000) [k]	1,522.3	87.4	262.1	1,053.7
Beginning cash/operating expenses (%) [k]	40.4	55.9	53.7	34.1
Probability of a cash flow deficit (%) [l]				
2007	54.8	6.6	45.0	62.2
2008	57.6	17.4	52.2	67.8
2009	25.2	1.0	41.2	33.4
2010	21.8	1.0	31.2	27.0
2011	19.6	1.0	30.0	24.0

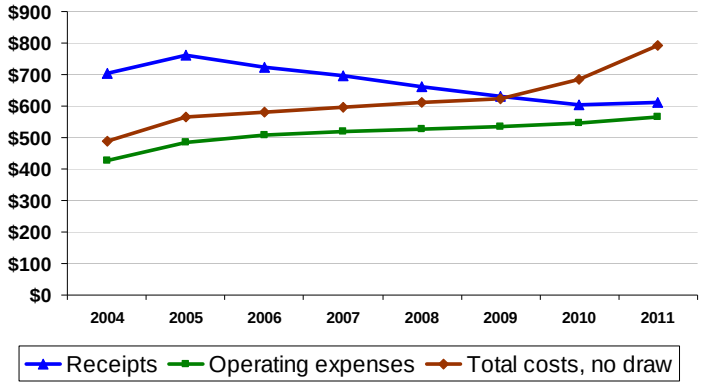
See table reference notes on page 38.

Summary of Beef Farms

- Average cash margins narrow from $216 per cow in 2004 to $7 per cow in 2009. The sharp increase in total costs at the end of the projection period is due to financing costs and debt accumulation when cash reserves are expended.

- Operating costs climb $137 per cow over the simulation period.

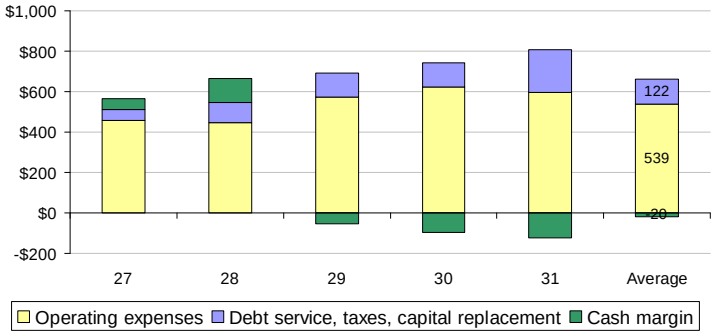
Costs and returns per cow, all beef farms



- Average projected operating costs per cow are $539, up $50 from the previous baseline.

- Average cash margin is at least positive for the two lowest cost farms, but does not return an amount necessary for family living.

Average projected costs and returns per cow, by farm



- Cash deficit risk is cause for concern on all of the beef farms. The projected cost-price squeeze indicates some lean years and difficult times ahead.

Cash flow risk ratings, by farm

Farm	Region	Forage ac	Cows	2006-07	2008-2010
27	CT	1560	400 + Bk		
28	SW	735	200		
29	SW	935	260 + Bk		
30	SC	1850	350		
31	SC	650	150 + Bk		

Low | Moderate | High | Severe

25% 50% 75%

Beef Farm Spotlights

Farm 27
This Ozark hill farm near Salem markets calves from 400 beef cows. Hardwood timber is a major resource on the 2460 total farm acres. Semi-regular timber harvests are scheduled to help offset periods of poor cattle prices. With initial debt of four percent assumed against the $3.9 million in operator assets, the farm “pays the bills” as long as feeder cattle prices are above the mid nineties. Returns to family living rise and fall with the cattle price.

Farm 28
This Southwest region farm is best described as a traditional Missouri cow-calf operation with 200 cows on 735 acres of owned forage land. Calves are sold directly off the cow at an average weight of 540 pounds. Fescue seed sales from owned acres are a substantial portion of receipts. However, this farm no longer earns income from a custom seed harvest enterprise due, in part, to seed contamination issues. The last year has been particularly difficult with drought and then ice damage. With relatively low costs per cow, the farm is expected to have positive cash flow in each year of the projection period, but not meet owner withdrawal needs.

Farm 29
This Lawrence County farm runs 260 beef cows and backgrounds home raised calves to about 800 pounds on 935 forage acres. Alfalfa hay provides a substantial portion of the forage needs. Calves are backgrounded on a liquid whey ration. This farm caught the brunt of drought and then ice damage in 2006 and early 2007. With a declining beef price outlook, it is projected to have negative annual returns, whittling away at accumulated cash from 2004-2007. However, no additional borrowing is required in the five-year outlook.

Farm 30
This farm runs 350 cows on 1850 forage acres in Oregon County. Forages include alfalfa and warm-season grasses. The farm retains and develops replacement heifers for sale which helps explain why farm costs on a per cow basis are relatively high at $742. The projected decline in feeder cattle prices hits this farm hard. By the end of 2009, accumulated cash profit is erased and additional borrowing is required to meet all cash expenses, including the modest family withdrawal.

Farm 31
This Howell County farm raises and backgrounds calves from 150 cows on 650 forage acres. Forages include warm season grass and alfalfa. Farm receipts and costs per cow are the highest of the group. The farm returned about $32,000 to family living in 2004, but the combined effects of drought, higher costs, and especially declining beef prices result in negative returns by 2008. Cash reserve is eliminated in 2009.

Table 7. **Beef** farms, characteristics

Code	CTBF400	SWBF200	SWBF260	SCBF350	SCBF150
Farm number	**27**	**28**	**29**	**30**	**31**
Region	Central	Southwest	Southwest	South Central	South Central
County	Phelps	Barry	Lawrence	Oregon	Howell
Land base	2460	770	1085	2000	825
'Cropland' hay acres	40		100	90	50
Other forage acres	1520	735	835	1760	600
Timber/waste acres	900	35	150	150	175
Operator owned (%)	80	100	72	50	89
Cash leased (%)	20		28	50	11
Beef enterprises					
Mature beef cows (hd)	**400**	**200**	**260**	**350**	**150**
Average sale weight of steers (lbs)	700	590	800	600	735
Cash receipt sources [a]					
Share of total					
Beef (%)	96	80	93	93	90
Hay and/or seed (%)	2	20	6	5	10
Custom work/timber sales (%)	2		1	2	
Harvested acres [b]					
Total acres, includes double cropped	**1560**	**885**	**1041**	**2125**	**650**
Alfalfa hay	40	40	100	50	50
Warm-season grass hay				40	10
Cool-season grass hay	370	310	200	200	75
Fescue seed		150	106	425	
Improved pasture	1150	385	635	1410	515
Crop yields [c]					
Alfalfa, tns					
2004	4.3		4.1	4.0	4.1
2005	4.3		4.1	4.0	3.2
2006			2.5	4.0	2.5
Warm-season grass hay, tns					
2004				4.0	2.5
2005				4.0	2.5
2006				4.0	0.5
Cool-season grass hay, tns					
2004	1.5	1.5	1.8	2.0	2.1
2005	1.5	1.5	1.8	2.0	2.1
2006	1.5	1.5	1.8	2.0	1.3
Fescue seed, lbs					
2004		200	300	250	
2005		250	250	0	
2006		210	200	200	

Table 7. **Beef** farms, financial outlook (continued).

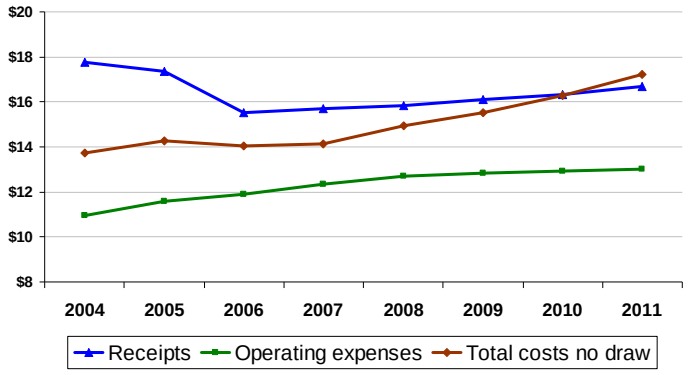
Code	CTBF400	SWBF200	SWBF260	SCBF350	SCBF150
Farm number	**27**	**28**	**29**	**30**	**31**
Near term cash risk outlook [d]	Moderate	Moderate	High	Severe	Severe
Intermediate term cash risk outlook	High	High	Severe	Severe	Severe
Average operator assets ($1000)	3,939	2,285	2,303	2,311	1,714
Average operator assets ($ per cow)	9,848	11,426	8,860	6,602	11,428
Average return to operator assets (%)	1.9	5.1	2.4	0.7	2.3
Assumed operator debt, Jan 1, 2004 (%) [e]	4	4	4	4	4
Term debt capacity, Jan 1, 2007 (%) [f]	3	4	-3	-3	-2
"Cropland" value in 2004 ($ per acre)	1,091	1,600	1,438	1,046	1,417
Average operating expense/receipts (%)	85.9	69.8	96.6	98.7	90.3
Average whole-farm cash expenses excluding operator labor ($ per cow)	512	548	692	742	809
Average whole-farm cash receipts ($ per cow)	564	667	637	648	685
Total cash receipts ($1000) [a]					
2004	268.7	132.6	180.2	262.4	110.9
2005	288.8	149.9	203.9	256.5	122.4
2006	279.5	135.6	184.1	259.9	119.5
2007	248.7	143.4	181.0	242.9	113.5
2008	235.1	137.2	170.9	233.9	105.2
2009	221.5	131.5	162.6	224.1	101.2
2010	210.4	126.7	155.5	215.8	96.1
2011	212.5	128.0	157.9	217.3	97.8
Average	225.6	133.4	165.6	226.8	102.8
Net cash farm income ($1000) [h]					
2004	114.8	60.9	67.2	89.3	41.4
2005	123.2	70.0	77.8	69.2	33.1
2006	109.2	49.0	41.8	62.4	35.6
2007	70.1	54.3	37.1	38.3	28.2
2008	53.4	49.1	25.0	22.5	18.7
2009	38.8	43.4	15.1	8.7	11.4
2010	26.0	36.9	5.3	-8.0	5.8
2011	26.5	37.1	0.9	-15.0	2.5
Average	42.9	44.2	16.7	9.3	13.3
Return to family living ($1000) [i]					
2004	88.3	46.6	54.7	71.3	31.9
2005	85.5	47.4	58.4	51.0	23.0
2006	73.3	29.9	29.4	38.6	23.6
2007	46.3	32.7	19.9	20.0	14.9
2008	27.9	27.0	5.5	2.2	2.9
2009	19.5	25.7	-7.4	-14.8	-11.0
2010	5.2	19.6	-30.8	-57.6	-34.9
2011	5.3	14.1	-58.3	-114.9	-65.2
Average	20.8	23.8	-14.2	-33.0	-18.7
Average owner withdrawal assumed ($1000) [j]	28.3	28.3	28.3	28.3	22.7
Beginning cash, 2007 ($1000) [k]	171.1	47.4	65.6	84.1	16.8
Beginning cash/operating expenses (%) [k]	95.8	53.2	45.6	41.1	19.7
Probability of a cash flow deficit (%) [l]					
2007	20.0	33.2	52.4	55.2	65.2
2008	42.0	45.6	72.0	79.6	87.8
2009	53.8	51.4	84.4	92.0	94.2
2010	72.8	67.0	94.0	99.0	99.0
2011	72.2	74.2	96.4	99.0	99.0

See table reference notes on page 38.

Summary of Dairy Farms

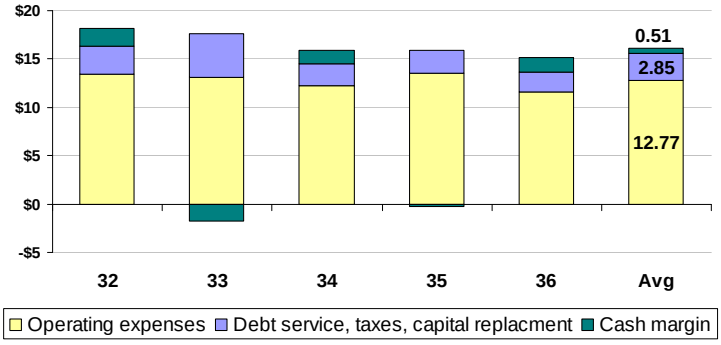
- Cash margin in the high profit year of 2004 averaged $4.02 per cwt. of milk sold.
- In 2006, returns to family living (cash margin) averaged $1.51 per cwt.
- Average margins narrow in the outlook, turning negative in 2011.
- MILC payments are received in 2006 and 2007, but then expire in this baseline.

Costs and returns per cwt., average of all dairies



- Projected cash margins for this set of farms average only $0.51 per cwt. of milk sold with a range from negative $1.80 to positive $1.82.
- Both the smallest farm (85 cows) and the largest farm (400 cows) are projected to have negative returns on average.
- Operating costs are $0.89 per cwt. higher in this baseline than one year ago.

Projected average costs and returns per cwt., by farm



- Cash deficit risk for the dairies is the highest measured this decade. Contributing factors are higher feed costs and the expiration of a counter-cyclical price program in this baseline.

Cash flow risk ratings, by farm

Farm num	Region	Forage ac	Cows	2006-07	2008-2010
32	EC	350 + 200 C	150		
33	SW	340	85		
34	SW	245	110		
35	SW	600	400		
36	SW	350	230		

Low | Moderate | High | Severe

25% 50% 75%

Dairy Spotlights

Farm 32
This 150 cow dairy located in the Missouri River hills produces milk with a moderate investment in confinement facilities. In addition to growing all forage requirements for the dairy, the farm raises corn and soybeans on 200 acres of bottomland. Asset values are relatively high, partially influenced by the farms' proximity to St. Louis and the resulting demand for recreational land. Of the five representative dairies, this farm has the highest level of milk production. This farm is expected to provide a household income with low to moderate cash risk.

Farm 33
This farm is a traditional 85 cow dairy raising alfalfa and corn silage. Population growth and the fact that some panel members are nearing retirement from milking means there have been few capital improvements. Rolling herd average is 18,500 pounds. Under the initial debt assumption of 20 percent, this farm is not sustainable with dairy income alone.

Farm 34
This 110 cow farm in Barry County is a hybrid of grazing and traditional dairying. Investments in waste management and mechanical harvesting machinery are relatively low. The farm raises all forages, but also purchases a high quantity of feed. Costs per hundredweight of milk sold are near the lowest out of all representative dairy farms. With 30 percent initial debt, the farm is likely to struggle to generate family living in the intermediate term. Drought in 2006 caused the farm to purchase some forages off-farm and reduced milk production.

Farm 35
This 400 cow farm in the Southwest operates a comparatively new confinement facility, grows corn silage as a portion of the forage requirements and purchases another 780 tons of alfalfa hay. Feed costs and poor milk prices have combined to put this farm in a precarious financial position. Major adjustments are indicated. This farm is projected to lose cash in each year of the outlook.

Farm 36
This 230 cow grazing dairy is projected to maintain the lowest costs per cow and per unit of milk sold. Over 400 tons of hay is purchased and heifers are developed off-site for a fee allowing the farm to maintain the milking herd on relatively few acres (1.25 acres per cow). With an initial debt load of 30 percent and a rolling herd average of 14,000 lbs, the farm is expected to return approximately $48,000 per year in family income.

Table 8. **Dairy** farms, characteristics

Code	ECDY150	SWDY85	SWDY110	SWDY400	SWDY230
Farm number	**32**	**33**	**34**	**35**	**36**
Region	East Central	Southwest	Southwest	Southwest	Southwest
County	Franklin	Christian	Barry	Dade	Dade
Land base					
Crop and hayland	340	222	180	450	
Acres owned	260	222	150	450	
Acres leased	80		30		
Other forages	220	110	65	150	290
Acres owned	170	55	65	150	290
Acres leased	50	55			
Timber/waste acres owned	155	20	30	120	10
Total acres operated	**715**	**352**	**275**	**720**	**300**
Operator owned (%)	82	84	89	100	100
Cash leased (%)	18	16	11		
Dairy herd					
Production unit type	Hybrid	Confinement	Hybrid	Confinement	Grazing
Mature dairy cows (hd)	**150**	**85**	**110**	**400**	**230**
Milk per cow (lbs)	22,800	18,500	22,175	21,800	14,000
Forages purchased off-farm (tns)				980	415
Cash receipt sources [a]					
Share of total					
Milk (%)	82	86	89	92	90
Cows, heifers, baby calves (%)	9	14	11	8	10
Crops (%)	9				
Harvested acres [b]					
Total acres, including douple crop	**625**	**332**	**245**	**600**	**342**
Alfalfa	40	85	60		52
Corn silage	100	32		135	
Perennial grass mixes	50	105	125	315	115
Annual grass mixes	65		30		115
Improved pasture	170	110	30	150	60
Corn, grain	135				
Soybeans	65				

Table 8. **Dairy** farms, financial outlook (continued).

Code	ECDY150	SWDY85	SWDY110	SWDY400	SWDY230
Farm number	**32**	**33**	**34**	**35**	**36**
Near term cash risk outlook [d]	Low	Severe	Moderate	High	Moderate
Intermediate term cash risk outlook	Moderate	Severe	High	High	Moderate
Average operator assets ($1000)	3,519	1,624	1,295	4,268	1,370
Average return to operator assets (%)	5.3	3.5	4.6	2.9	6.0
Assumed operator debt, Jan 1, 2004 (%) [e]	20	20	30	30	30
Term debt capacity, Jan 1, 2007 (%) [f]	23	12	24	21	21
"Cropland" value in 2004 ($ per acre)	2,450	2,435	1,500	1,984	1,443
Average operating expense/receipts (%)	78.9	89.4	85.5	101.2	86.3
Average whole-farm cash expenses,					
excluding operator labor ($ per cow)	3,596	3,305	3,024	3,374	1,973
excluding operator labor ($ per cwt)	16.65	18.67	14.82	16.22	14.72
Average government payments/receipts (%)	1.4	0.3	0.3	0.1	0.2
Government payments ($1000) [g]					
2004	9.1	0.0	0.0	0.0	0.0
2005	14.4	0.0	0.0	0.0	0.0
2006	21.9	9.7	13.6	14.7	14.7
2007	12.0	3.6	5.0	5.3	5.3
2008	6.9	0.0	0.0	0.0	0.0
2009	6.9	0.0	0.0	0.0	0.0
2010	6.9	0.0	0.0	0.0	0.0
2011	6.9	0.0	0.0	0.0	0.0
Average	7.9	0.7	1.0	1.1	1.1
Total cash receipts ($1000) [a]					
2004	621.5	281.4	410.2	1483.7	557.2
2005	621.5	272.6	402.9	1434.5	542.7
2006	560.8	247.2	357.8	1260.3	487.3
2007	580.7	247.1	356.3	1282.3	489.3
2008	587.2	247.6	357.4	1300.6	492.5
2009	604.2	250.9	362.6	1320.6	499.7
2010	606.0	254.8	368.6	1343.7	508.0
2011	618.3	260.6	377.1	1376.4	520.1
Average	599.3	252.2	364.4	1324.7	501.9
Net cash farm income ($1000) [h]					
2004	229.6	104.8	169.0	541.6	221.9
2005	220.6	81.6	145.8	427.2	187.4
2006	147.0	57.2	89.2	230.5	121.9
2007	153.2	47.7	83.9	179.7	113.6
2008	146.5	41.6	77.8	164.9	108.3
2009	159.7	41.5	79.4	168.3	113.2
2010	160.3	42.6	84.4	178.4	119.2
2011	172.9	45.7	90.4	203.0	129.0
Average	158.5	43.8	83.2	178.9	116.7
Return to family living ($1000) [i]					
2004	146.0	63.8	101.6	270.8	134.5
2005	123.7	42.4	83.0	196.3	103.0
2006	70.5	19.2	40.9	73.1	52.1
2007	82.1	12.5	52.4	42.4	56.8
2008	59.0	-4.0	37.2	-4.1	46.4
2009	60.6	-19.1	30.2	-37.3	47.6
2010	48.5	-49.6	25.0	-54.9	47.2
2011	49.3	-83.5	14.0	-71.5	42.7
Average	59.9	-28.8	31.8	-25.1	48.1
Average owner withdrawal assumed ($1000) [j]	51.0	30.6	45.3	62.3	56.6
Beginning cash, 2007 ($1000) [k]	200.6	42.7	101.4	376.3	140.6
Beginning cash/operating expenses (%) [k]	46.9	21.4	37.2	34.1	37.4
Probability of a cash flow deficit (%) [l]					
2007	8.6	71.2	23.4	39.0	36.2
2008	24.6	83.6	42.2	55.6	45.2
2009	27.6	86.0	49.8	63.0	45.2
2010	34.8	95.4	51.4	59.6	41.4
2011	35.2	97.8	62.4	58.2	48.4

See table reference notes on page 38.

Summary of Broiler-beef Farms

The broiler-beef farms were built and are maintained in cooperation with the integrator firms who contribute critical data for the analysis through the consensus process. Several assumptions underlie these farms for baseline analysis.

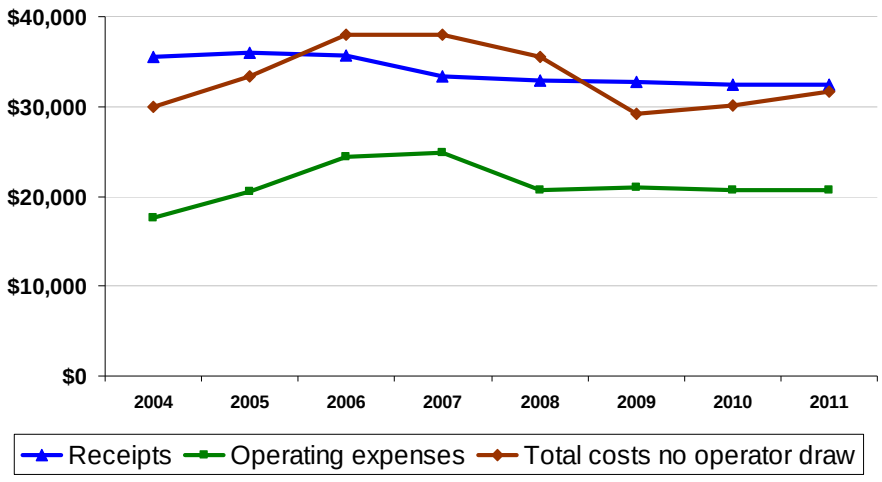
For both farms it assumed that the poultry units came online in 1999 with 90 percent financing for the houses with their real estate assets owned debt-free by the operator. With a ten year loan, debt payments expire at the end of 2008. Broiler house technology is held constant with a 40 X 400 foot, curtain sided building, heated with propane. In keeping with the local markets in Southwest Missouri, the nominal market value of existing units is held constant. Additional costs are applied in 2007 and 2008 to cover significant building repairs.

Income taxes make up a substantial share of the costs in this analysis, particularly after loan payout. Results help explain why broiler housing loans were often extended to 15 years.

A critical assumption for the baseline analysis—made for the broiler-beef farms only—is that no owner withdrawal is extracted from the business. Thus, it is implied that an off-farm source of income is available to support the household.

Contract terms, though different for each representative farm, have been relatively stable the past few years and are modeled at a flat rate in the projection period.

Costs and returns per house,
Average of two broiler-beef farms



Broiler-beef Spotlights

Farm 37
This farm raises six flocks per year in a four house complex. Receipts come from the broilers and beef calves only. All 210 acres are owned. Hay is harvested by a custom operator for a fee. Land values have escalated rapidly in recent years due to population pressure in the region. Land exchanges for tax purposes are often cited as a major reason for rapidly rising land values in this fairly remote area.

Farm 38
This farm raises six to seven flocks a year in a six house complex on 120 owned acres. An additional 40 acres of pasture is leased. A portion of receipts come from fescue seed. All haying equipment is owned by the operator. The impacts of rising costs, lower beef prices, and the scheduled housing repairs result in negative returns for this farm in the projection period.

Table 9. **Broiler-beef** farms, characteristics

Code	SWBRBF4	SWBRBF6
Farm number	**37**	**38**
Region	Southwest	Southwest
County	McDonald	Lawrence
Land base		
Crop and hayland	40	65
Acres owned	40	65
Acres leased		
Other forages	160	95
Acres owned	160	55
Acres leased		40
Timber/waste acres owned	10	
Total acres operated	**210**	**160**
Operator owned (%)	100	75
Cash leased (%)		25
Poultry and livestock		
Broiler production		
Number of houses	4	6
Sale weight of birds (lbs)	4.4	3.9
Mature beef cows (hd)	50	50
Cash receipt sources [a]		
Share of total		
Broiler (%)	79	84
Beef (%)	21	14
Hay and/or seed (%)		2
Harvested acres [b]		
Total acres	**200**	**225**
Cool-season grass hay	40	65
Fescue seed		65
Improved pasture	160	95
Crop yields [c]		
Cool-season grass hay, tns		
2004	3.0	3.0
2005	3.0	3.0
2006	3.0	3.0
Fescue seed, lbs		
2004		400
2005		200
2006		200

Table 9. **Broiler-beef** farms, financial outlook (continued).

Code	SWBRBF4	SWBRBF6
Farm number	**37**	**38**
Near term cash risk outlook [d]	Severe	Severe
Intermediate term cash risk outlook	Low	Moderate
Average operator assets ($1000)	1084	1095
Average return to operator assets (%)	4.9	2.4
Assumed operator debt, Jan 1, 2004 (%) [e]	19	27
Term debt capacity, Jan 1, 2007 (%) [f]	25	25
"Cropland" value in 2004 ($ per acre)	1600	1650
Average operating expense/receipts (%)	73.1	77.2
Average whole-farm cash expenses excluding family living ($/cow)	2,583	4,028
Total cash receipts ($1000) [a]		
2004	144.3	209.0
2005	148.1	209.9
2006	146.3	208.0
2007	137.7	193.8
2008	134.7	191.8
2009	134.2	191.8
2010	132.8	189.3
2011	133.2	189.0
Average	134.5	191.1
Net cash farm income ($1000) [h]		
2004	73.7	102.9
2005	67.1	85.8
2006	50.3	58.9
2007	40.0	41.4
2008	54.6	63.0
2009	52.2	62.5
2010	53.0	60.7
2011	53.8	59.4
Average	50.7	57.4
Return to family living ($1000) [i]		
2004	21.0	35.3
2005	11.6	13.8
2006	-8.6	-15.6
2007	-18.3	-28.1
2008	-8.3	-20.1
2009	21.6	9.9
2010	19.8	-3.1
2011	12.2	-9.8
Average	5.4	-10.3
Average owner withdrawal assumed ($1000) [j]	0.0	0.0
Beginning cash, 2007 ($1000) [k]	24.0	35.0
Beginning cash/operating expenses (%) [k]	24.5	23.0
Probability of a cash flow deficit (%) [l]		
2007	99.0	99.0
2008	62.8	98.6
2009	12.2	19.4
2010	11.4	23.4
2011	11.2	28.0

See table reference notes on page 38.

Table Reference Notes

The term “average” in the financial tables always refers to the annual average of the variable for the five projection years.

a. Cash receipts is total gross revenue from all sources, including cash sales in the market, insurance indemnities, and government payments for crops that may not be planted. For a minority of farms this figure also includes a relatively small income from custom farming activity.

b. Planted acres may exceed total crop acres due to double and triple cropping practices. Forage crops are labeled as harvested acres for beef and dairy farms. These acres may be harvested mechanically (hay, haylage, silage) and/or grazed.

c. Yield data are as reported by the panels via update meetings or surveys. Irrigated crops are denoted by “Irr.” Otherwise, yields are dryland. Soybean yields are for full season crops.

d. Cash risk outlook is scored based on the probability of cash flow deficit over two time periods (see l). Near term are the calendar years 2007 and 2008. Intermediate term is the period 2009-2011. Low risk is less than a 25 percent chance of cash flow deficit in *any* year of the time period; moderate risk is 25 to 49 percent, high risk is 50 to 74 percent, and severe risk is greater than a 75 percent probability of a cash flow deficit.

e. A beginning level of term debt on January 1, 2004 is assumed for each of the farms. Loan length is the same for all the farms, but interest rates are localized. The values of assets and liabilities, and therefore debt ratios, fluctuate from this starting point. (See Appendix A).

f. Term debt capacity ratio is a crude estimate of the debt capacity limit for the farm going into the projection period. Projected receipts and expenses are used to estimate cash available for servicing debt. The loan calculations assume a ten-year loan at 8.5 percent interest. The debt ratio is calculated in relation to operator assets at fair market value. The number reported in the tables is at the median risk level. See Appendix A for further explanation.

g. Government payments include all receipts provided through the commodity titles of the farm bill, including direct (fixed) payments, counter-cyclical payments, and marketing loan benefits. Dairy market loss payments are included where applicable.

h. Net cash farm income is total cash receipts less all farm *operating* expenses including interest payments on all outstanding debt. Cash costs not included are principal payments on liabilities, cash down payment for capital replacement, income taxes, and owner withdrawal. (See Appendix A).

i. Annual return to family living is the farm’s after-tax bottom line for the given year. It is the residual after all other cash expenses are deducted from current year receipts. This calculation includes carryover debt, but not carryover cash from prior years. (See Appendix A).

j. Owner withdrawal is the minimum amount assumed to be extracted from the business for household purposes. It is also used as a proxy for the value of managerial labor in determining rates of return.

k. Beginning cash in 2007 is the cash reserve accumulated by the farm in the three historical years of the simulation. It is an estimate of the cash cushion the farm has going into the projection period, expressed as a percent of the projected operating expenses in 2007.

l. Annual probability of cash flow deficit is the chance that total receipts will be less than total cash expenses as a result of price and production risk. Alternatively, it is the chance that returns to family living will be less than the minimum owner withdrawal (See Appendix A).

APPENDIX A
Procedural Notes and Assumptions

Methods and assumptions

The representative farm approach treats a farm business unit as a unique system characterized by local features and resources that are adapted to by the farm manager. Local conditions are internalized in the creation and simulation of each farm.

Primary data are initially developed and continuously validated by Missouri producers via a consensus process. Producers establish farm structure, size, farming practices, costs of production and associated financial requirements for the representative farm based on their individual operations. In some cases, data points are cross-referenced with published sources to test assumptions or to verify and explain differences. Business size, structure and management practices are held constant for the simulation period: 2004-2011.

For simulation, actual yield, price, and operating costs data are used for the years 2004-06. The historical period provides some perspective of financial performance with known values and sets a footing for simulation over the five year projection period.

Farm financial statements are generated using the Farm Level Income and Policy Simulation Model (FLIPSIM), property of the Texas Agricultural Experiment Station maintained at the Agricultural and Food Policy Center, Texas A&M University. National price estimates are generated by the FAPRI consortium at the University of Missouri and Iowa State University. Table A.1 shows the deterministic prices used to build financial performance estimates for the representative farms. (See Table A.5 for selected stochastic prices).

Table A.1. National, season-average prices, FAPRI deterministic projections ($ per unit)

Commodity	2004	2005	2006	2007	2008	2009	2010	2011
			Crop Year					
Corn, bu	2.06	2.00	3.16	3.24	3.24	3.25	3.22	3.19
Sorghum, bu	1.79	1.86	3.09	2.97	2.98	3.01	3.02	3.02
Wheat, bu	3.40	3.42	4.28	4.11	4.07	4.11	4.15	4.17
Soybeans, bu	5.74	5.66	6.10	6.68	7.02	7.01	6.90	6.83
Cotton, lb	0.42	0.48	0.48	0.52	0.55	0.57	0.57	0.58
Long rice, cwt	7.33	7.62	9.85	8.09	8.02	8.30	8.51	8.54
Cottonseed, tn	107.00	96.00	110.00	119.66	125.74	125.15	122.24	120.39
Soybean meal (44%), tn	174	166	172	179	178	174	170	168
All hay, tn	92.00	98.20	110.66	109.77	108.68	108.99	109.53	109.39
			Calendar Year					
Cull cows, lb	0.524	0.544	0.477	0.479	0.481	0.472	0.460	0.462
Feeder steers, lb	1.12	1.20	1.18	1.09	1.02	0.96	0.91	0.92
Fed steers, lb	0.848	0.873	0.854	0.856	0.859	0.844	0.824	0.824
Cull sows, lb	0.43	0.43	0.37	0.34	0.33	0.36	0.40	0.42
Barrow and gilts, lb	0.525	0.501	0.473	0.454	0.444	0.480	0.514	0.540
Missouri all milk, cwt	16.40	15.50	13.29	14.56	14.65	14.68	14.78	14.95

Representative farms are assumed to participate in government programs as eligible. Applicable farm bill provisions are incorporated over the life of the simulation. With the exception of the dairy program, it is assumed that provisions of the 2002 farm bill remain intact through 2011. The milk income loss contract (MILC) program expires August 31, 2007 in this analysis, as it does in current law. It is further assumed for the baseline that the representative farms do not encounter limitations on the level of government payments and the current farm bill is fully funded without budget cuts.

For representative farms participating in the multi-peril crop insurance program, eligible crops are assumed to be insured with a basic APH plan at 100 percent price and 65 percent yield protection.

Only income generated with farm business assets is included in receipts, not off-farm wage income. Some farms earn a relatively small portion of total receipts from custom farming enterprises that are included in the analysis.

Each farm is modeled as a sole proprietorship with four tax exemptions, subject to federal, Missouri and self-employment taxes.

With the exception of the two broiler-beef representative farms, an annual charge for unpaid operator labor (or more appropriately called owner withdrawal) is deducted from the farm business as a lump sum. Household expenses are not itemized.

The level of owner withdrawal assumed for the beginning year (2004) varies for each farm within a range of $15,000 to $68,000 and is inflated thereafter. This amount is a function of farm size, investment, hours required, and projected net income. In general, owner withdrawal is a modest amount. Any other family labor is treated as hired labor and deducted as a cash expense.

Accounting procedures

The accounting method used to model representative farm financials is a cash-basis, whole-farm, after-tax approach. The cash flow statement is the primary tool of this analysis and returns to family living are considered to be the bottom line, i.e., cash *available* for owner withdrawal from *current year* earnings.

The tables below illustrate how summary statistics are developed for all farms shown in this report. The sample farm crops about 1500 acres of corn, soybeans and wheat and runs 100 beef cows.

Table A.2. Modified cash income statement, sample representative farm

		2004	2005	2006	2007	2008	2009	2010	2011
Cash income (net of share lease)									
1	Cash receipts for crops	480,280	200,003	426,998	436,190	451,945	457,812	459,186	460,504
2	Cow-calf receipts	49,606	55,210	52,281	48,758	45,864	42,988	40,675	41,142
3	CCP payments	5,427	17,003	12,859	0	0	0	0	0
4	Fixed payments	22,785	22,785	22,785	22,785	22,785	22,785	22,785	22,785
5	LDP payments	28,853	14,528	491	0	0	0	0	0
6	Indemnity payments	0	38,018	0	0	0	0	0	0
7	Total cash receipts	586,951	347,547	515,414	507,733	520,594	523,585	522,646	524,431
Farm expenses (net of share lease)									
8	Seed	39,702	42,323	45,606	47,248	48,278	48,978	49,708	50,533
9	Fertilizer	62,077	75,258	77,779	80,950	83,561	83,889	84,085	84,673
10	Crop chem	26,116	26,508	27,175	27,628	28,065	28,376	28,699	29,089
11	Custom hire	12,593	13,992	15,391	15,528	15,793	15,674	15,594	15,411
12	Hauling/drying/other harvest	4,641	1,990	4,440	4,526	4,646	4,685	4,732	4,756
13	Crop insurance premiums	5,822	5,508	5,359	5,359	5,359	5,359	5,359	5,359
14	Cash rent for cropland	35,040	38,325	41,610	41,610	41,610	41,610	41,610	41,610
15	Sum listed crop costs	185,991	203,904	217,360	222,849	227,312	228,571	229,787	231,431
16	Cow-calf direct cost	5,779	6,139	6,408	6,581	6,749	6,876	7,011	7,155
17	Cow-calf purchased feed and hay	3,903	4,274	4,136	4,302	4,445	4,396	4,282	4,185
18	Purchased beef cattle	2,040	2,277	2,232	2,065	1,926	1,795	1,693	1,713
19	Cash rent for pastureland	5,092	5,896	6,700	6,700	6,700	6,700	6,700	6,700
20	Sum listed beef costs	16,814	18,586	19,476	19,648	19,820	19,767	19,686	19,753
21	Hired labor	12,458	12,711	13,057	13,467	13,766	14,144	14,563	15,013
22	RE and property taxes	5,840	6,259	6,421	6,694	6,891	7,032	7,178	7,368
23	Accounting and legal	1,196	1,253	1,305	1,335	1,360	1,378	1,404	1,434
24	Unallocated maintenance	25,305	26,434	27,327	28,111	28,794	29,486	30,214	30,999
25	Utilities	1,932	2,535	2,739	2,764	2,811	2,790	2,776	2,743
26	Whole farm fuel	14,843	19,475	21,049	21,236	21,597	21,435	21,326	21,076
27	Farm insurance	5,071	5,313	5,533	5,660	5,768	5,843	5,953	6,078
28	Miscellaneous	374	394	408	427	436	442	447	453
29	Conservation work	470	494	512	538	547	552	556	562
30	Sum unallocated overhead costs	67,489	74,868	78,351	80,232	81,970	83,102	84,417	85,726
31	Sum all listed costs	270,294	297,358	315,187	322,729	329,102	331,440	333,890	336,910
32	Gross margin	316,657	50,189	200,227	185,004	191,492	192,145	188,756	187,521

Table A.2 shows the receipts portion of a modified cash flow statement with three years of historical data and four projected years (deterministic). Cash receipts for crops and the cow-calf enterprise (lines 1 and 2) are the market returns from ag product sales. Government payments are estimated on lines 3 through 5. Counter cyclical and marketing loan benefits are estimated given FAPRI's baseline market prices. In 2005 this farm received crop insurance indemnity payments as a result of drought conditions.

Table A.2 also summarizes the cash farm operating expenses for the sample farm. In the data collection phase, direct costs are allocated to an enterprise and overhead costs are estimated for the whole farm as structured by the panel. Gross margin (line 32) is total cash receipts (line 7) less the sum of all listed costs (line 31). It is the cash earned within the year after operating expenses, excluding interest.

Five costs components are deducted from gross margin to arrive at net earnings for the year. They are: 1) interest payments, including carryover interest, if any, 2) principal payments on debt service, including carryover, if any, 3) cash difference in trade-in values to replace depreciable assets, 4) estimated income and self-employment taxes, and 5) an owner withdrawal for family living. These charges are tracked for the sample farm in a modified cash flow statement, Table A.3.

Table A.3. Modified cash flow statement, sample representative farm

		2004	2005	2006	2007	2008	2009	2010	2011
33	Beginning cash reserves	0	120,964	26,991	60,935	87,218	104,344	113,599	97,680
34	Interest earned on reserve	0	1,158	267	607	898	1,119	1,233	1,070
35	Gross margin	316,657	50,189	200,227	185,004	191,492	192,145	188,756	187,521
36	Cash available	316,657	172,311	227,485	246,546	279,608	297,608	303,588	286,271
37	LT interest	28,130	26,234	24,177	21,945	19,523	16,895	14,043	10,950
38	IT interest	11,259	9,056	9,337	11,143	14,278	16,076	20,875	15,135
39	Op interest	15,728	11,213	17,878	16,600	16,053	15,930	15,767	17,134
40	Carryover op interest	0	0	0	0	0	0	0	0
41	Total interest expense	55,117	46,503	51,392	49,688	49,854	48,901	50,685	43,219
42	LT principal payment	22,308	24,205	26,262	28,494	30,916	33,544	36,395	39,489
43	IT principal payment	35,766	39,721	49,638	29,758	42,367	43,616	61,188	56,874
44	Operating loan carryover	0	0	0	0	0	0	0	0
45	Total debt reduction	58,074	63,926	75,900	58,252	73,283	77,160	97,583	96,363
46	Cash difference on cap repl.	375	774	0	710	0	1,283	0	0
47	Federal income taxes	25,106	0	0	3,756	4,031	5,522	5,613	11,311
48	Missouri income taxes	8,621	0	881	2,746	2,880	3,528	3,587	5,367
49	Self-employment taxes	15,400	0	3,145	8,175	8,494	10,234	10,403	14,531
50	Total taxes	49,127	0	4,026	14,677	15,405	19,284	19,603	31,209
51	Sum listed cash demands	162,693	111,203	131,318	123,327	138,542	146,628	167,871	170,791
52	**Return to family living**	**153,964**	**(61,014)**	**68,909**	**61,677**	**52,950**	**45,517**	**20,885**	**16,730**
53	Annual owner withdrawal	33,000	34,117	35,232	36,001	36,722	37,381	38,037	38,737
54	**Annual net earnings**	**120,964**	**(95,131)**	**33,677**	**25,676**	**16,228**	**8,136**	**(17,152)**	**(22,007)**
55	Cumulative cash position	120,964	26,991	60,935	87,218	104,344	113,599	97,680	76,743

Machinery and equipment items are replaced on a schedule as determined by the practices of the panel and financial feasibility. For example, say the farm purchased a combine and corn head (new or used) in 2000 and plans to replace them every eight years. The simulation will force the trade in 2008. When replacement is due, a cash transaction occurs and, if necessary, a new intermediate loan is created. This occurred in 2009 for the sample farm (line 46).

Income and self-employment tax liabilities are deducted on line 50. Section 179 rules and income averaging are built into the federal tax calculations.

No carryover debt is shown for the sample farm. If a shortfall occurs, repayment with interest is forced in the following year. The simulation will continue to create new borrowing until the cash deficit is eliminated with farm earnings.

In 2005, the sample farm does experience a cash deficit. Return to family living, i.e., cash earnings for the year available to the operator are a negative $61,014 (line 52). After the owner withdrawal, there is a net loss for the year of $95,131 (line 54). Fortunately, for this farm business, there is a positive carryover from 2004. This farm does not create new borrowing to cover the shortfall, but must dip into the cash reserve (line 55), reducing the carryover into 2006 (line 33).

Debt on farms

To simulate future cash flows, initial farm debt in the baseline is an assumed value based on the type of farm (asset turnover rate), historical profitability, and the business phase as indicated by the panel members. This assumption is particularly important for livestock, dairy, and poultry farms with a potentially wide range of investment in facilities.

For all representative farms, an initial term debt level is set for the beginning of the simulation period (January 1, 2004) and the simulation forces annual principal and interest payments on schedule. For example, a profitable crop farm with beginning term debt of 20 percent will have term debt of about ten percent at the start of the projection period due to declining liabilities and escalating asset values over the three historical years. The assumed level of initial term debt appears in the financial tables. The rule regarding term length places a farm in the middle of the loan term. For example, crop farms start with a 20 year real estate loan with 10 years remaining. Exceptions to the rule are made for farms with high investment in single purpose buildings. For all baseline farms, current assets and current liabilities are assumed to be zero on January 1, 2004.

According to USDA, the trend in total debt for Missouri farms, as a percent of assets, gradually declined from the recent high of 15.1 percent in 1998 (end of year) to 9.6 percent in 2003, and then 7.7 percent in 2004. For December 31, 2005, the most recent data available indicates average Missouri debt across all farms increased slightly to 7.9 percent.

Table A.4 shows USDA data by major enterprise and sales category for the date coinciding with our initial debt assumptions for the baseline. Overall, Missouri farm debt is lower than the U.S. average. In general, the debt level assumption on representative farms is higher than the reported averages.

Table A.4. USDA average debt to asset ratios for farm businesses, Dec 31, 2003

Sales ($1000)	**Cash grains**	**Corn**	**Soy**	**Cotton**	**Beef**	**Hogs**	**Dairy**	**Poultry**	**All**
Missouri									
Under $100	8.9*	**	9.6	0.5*	5.2	**	7.3*	**	5.8
$100 to $250	17.2	16.9*	6.7*	30.9*	5.0	2.4*	11.1	**	11.5
$250 to $500	8.0	13.6*	25.6	**	12.9*	**	11.1*	15.2*	12.7
$500 to $1000	9.4*	25.5	15.4	10.9*	6.0*	**	20*	32.9*	17.2
Over $1000	20.5*	**	21.4*	20.2	15.5*	2.3*	**	**	15.6
All sales classes	12.1	19.5	15.9	16.8	5.6	2.5*	8.8	24.4*	9.6
U.S.									
Under $100	5.3	7.3	7.9	7.3	7.1	9.8*	10.1	20.6	8.2
$100 to $250	12.7	14.0	10.8	10.0	8.9	14.4	13.1	17.0	11.6
$250 to $500	15.3	15.4	16.5	20.3	10.9	19.1	16.9	19.6	14.5
$500 to $1000	16.0	16.7	16.1	11.1	13.4	22.9	19.5	24.2	15.3
Over $1000	26.9	18.2	19.2	17.1	11.9	18.4	28.1	28.2	19.5
All sales classes	13.6	14.0	12.1	12.5	8.9	19.0	17.2	24.1	12.8

*Statistically unreliable due to sample size. **Data not available.

Source: USDA Agricultural Resource Management Survey

The stochastic approach

To simulate future farm financial performance, prices and production are estimated stochastically. That is, prices and yields for the commodity are randomly drawn 500 times from empirical distributions determined by historical price and production interactions. The values shown in the financial tables earlier in this report are the mean of the 500 simulations of price and production interactions.

Price estimates are based on FAPRI stochastic projections for the U.S. agricultural sector published in March 2007. For each representative farm, the stochastic national prices are adjusted to fit individual representative farm marketing opportunities.

With regard to production, unique distributions are developed for each representative farm. Projected crop yields, livestock sale weights, birth rates, and milk per cow are allowed to vary as they have locally for the past ten years. Some farms have greater variability in production and therefore greater risk. Think of the classic example of a dryland farm with highly variable yields versus an irrigated farm with less yield variation.

For each of the 500 alternative futures, price projections reflect the joint effects of all the random supply and demand factors. Prices generally exceed the deterministic baseline when national yields are below average. Random factors affecting demand also play an important role, so it is possible to have lower than average production and lower than average prices in the same year.

Table A.5 Selected stochastic analysis results, FAPRI baseline, January 2007

Year	2006	2007	2008	2009	2010	2011
		dollars per bushel, crop year				
Corn price						
Deterministic baseline	3.16	3.24	3.24	3.25	3.22	3.19
Stochastic mean		3.23	3.22	3.23	3.21	3.18
10th percentile		2.79	2.76	2.76	2.75	2.69
90th percentile		3.71	3.71	3.75	3.77	3.72
Soybean price						
Deterministic baseline	6.10	6.68	7.02	7.01	6.90	6.83
Stochastic mean		6.73	7.05	7.03	6.92	6.81
10th percentile		5.49	5.70	5.62	5.53	5.44
90th percentile		8.10	8.51	8.63	8.53	8.20
Wheat price						
Deterministic baseline	4.28	4.11	4.07	4.11	4.15	4.17
Stochastic mean		4.11	4.06	4.11	4.14	4.16
10th percentile		3.60	3.54	3.58	3.59	3.64
90th percentile		4.54	4.51	4.58	4.63	4.68
		dollars per hundredweight, calendar year				
Nebraska steer price						
Deterministic baseline	85.41	85.61	85.91	84.36	82.36	82.40
Stochastic mean		85.87	86.13	84.41	82.12	82.00
10th percentile		75.08	73.09	72.96	69.44	68.41
90th percentile		100.63	99.82	97.43	96.57	97.88
Barrow and gilt price						
Deterministic baseline	47.26	45.43	44.43	48.03	51.44	53.95
Stochastic mean		45.56	44.46	48.15	51.45	53.69
10th percentile		34.46	32.68	34.07	37.98	38.70
90th percentile		61.42	58.82	64.22	68.17	69.47
Milk price						
Deterministic baseline	12.91	14.21	14.26	14.28	14.35	14.50
Stochastic mean		14.61	14.52	14.54	14.51	14.53
10th percentile		13.27	13.07	13.01	12.88	13.10
90th percentile		15.83	15.84	16.00	15.88	15.99

APPENDIX B
Representative Farm Panel Members

This listing identifies the 200 active producers and panel facilitators for this set of representative farms. For some of the farms, data has been developed in cooperation with producers not shown because they have since retired from farming or become inactive for other reasons. In a few instances, active panel members are not listed due to ongoing organizational changes in the farms to ensure proper representation within each panel. The county designation identifies the location of the main farming operation for each producer.

Feedgrain-soy farms

No. 1	2500 crop acres	NWFG2500
	Brooks Hurst – Panel facilitator and Atchison County producer	
	Samuel B. Graves – Atchison	Lyle Brown – Atchison
	Steve Alexander – Nodaway	Terry Ecker – Nodaway
No. 2	2300 crop acres	NWFG2300
	Tom Waters – Panel facilitator and Ray County producer	
	Dwight McMullen – Ray	Steve Ewert – Clay
	Max Hockemeier – Ray	
No. 3	890 crop acres	NCFG890
	Lee Metcalf – Panel facilitator, Missouri Dept. of Conservation Private Land Conservationist	
	Jerry Becker - Carroll	Bill Burton – Carroll
	Robert Maasdam – Carroll	Van Hudson – Carroll
	Roy Ritchart – Carroll	
No. 4	2050 crop acres	NCFG2050
	Parman Green – Panel facilitator, MU Extension Ag Business Specialist	
	James Wheeler – Carroll	Gerald Kitchen – Saline
	Ron Linneman – Carroll	Jack Harriman – Saline
	Kyle Durham – Carroll	Mike Ritchhart – Carroll
	Terry Reimer – Carroll	Rob Korff – Carroll
No. 5	3630 crop acres	NCFG3630
	Parman Green – Panel facilitator, MU Extension Ag Business Specialist	
	Mike and Preston Hisle – Saline	Todd Gibson – Carroll
	Glenn Kaiser – Carroll	Ronald Jenkins – Carroll
	Mark Casner - Carroll	Dennis Germann – Carroll
No. 6	2600 crop acres	NEFG2600
	John Schaffer – Panel facilitator and Lewis County producer	
	Jerry Ketsenburg – Ralls	Earl Gard – Marion
	Bill Goldinger – Marion	
No. 7	2300 crop acres	NEFG2300
	Karisha Devlin – Panel facilitator, MU Extension Ag Business Specialist	
	Gene Burkemper – Adair	Troy Carlyle – Shelby
	Dan Devlin – Knox	Chad Triplett – Scotland
	Rick Luttrel - Lewis	
No. 8	1300 crop acres	NEFG1300
	Mary Sobba – Panel facilitator, MU Extension Ag Business Specialist	
	Andy Adam - Audrain	Jules Willott – Audrain
	Ralph Windmann – Audrain	Richard Primus – Audrain
	Tom Becker – Audrain	
No. 9	1800 crop acres	WCFG1800
	Neal Bredehoeft – Panel facilitator and Lafayette County producer	
	Ellis Dieckhoff – Lafayette	Lynn Fahrmeier – Lafayette
	Dennis Schneider – Lafayette	

No. 10 1100 crop acres SWFG1100
Jay Chism – Panel facilitator, MU Extension Agronomy Specialist
Don Lucietta – Barton Dale Norwood – Barton
Darrel Crockett - Vernon Eric Lawrence – Barton
Susan Gardner-Graham

Cotton and Rice farms

No. 11 1600 crop acres SECT1600
Danny Davis – Dunklin Rance Daniels – Dunklin
Johnny Watkins – Pemiscot Tony Watkins – Pemiscot
Brian Waldrop – Pemiscot

No. 12 2000 crop acres SERC2000
Bruce Beck – Panel facilitator, MU Extension Agronomy Specialist, Rice
Ethan Doyle – Butler Floyd Page – Butler
Rick Spargo – Butler Will Spargo – Butler
Jim Bieller – Butler

No. 13 4000 crop acres SERC4000
Bruce Beck – Panel facilitator, MU Extension Agronomy Specialist-rice
Frank Smody – Butler Mike Smody - Butler
Rodney Eaker – Butler Rusty Eaker – Butler
Brian Yarbro – Butler Eric Patterson – Butler
John French - Butler

Crop-Beef farms

No. 14 1850 crop acres + 200 beef cows NWCB1850
Mike Killingsworth - Panel facilitator, Killingsworth Ag Services
Jack Baldwin – Nodaway Kevin Rosenbohm – Nodaway
Gary Ecker – Nodaway (retired) Roger Vest – Nodaway

No. 15 1485 crop acres + 100 beef cows NWCB1485
Kevin Hansen - Panel facilitator, MU Extension Ag Business Specialist
Greg Cooper – Carroll John Cramer - Livingston
Jim Schreiner - Livingston David Williams - Livingston

No. 16 1460 crop acres + 80 beef cows NECB1460
Darren Hoffman - Panel facilitator, NRCS Ralls County
Micah Lehenbauer – Ralls Tuley Elliott – Ralls
Phillip Thompson – Ralls Danny Benson – Ralls
Tony Griffin – Ralls

No. 17 500 crop acres + 50 beef cows NECB500
Mary Sobba – Panel facilitator, MU Extension Ag Business Specialist
Rodney Willingham – Audrain Adam Blaue – Montgomery
Henry Borgmeyer – Audrain John Houston – Audrain

No. 18 1400 crop acres + 150 beef cows + finishing steers WCCB1400
Al Decker - Panel facilitator, MU Extension Livestock Specialist
Doug Cox - Bates Jerrell Fischer – St. Clair
Lonny Duckworth - Bates Kyle Fischer - Bates

No. 19 380 crop acres + 40 beef cows ECCB380
Frank Wideman and Roy Hibbard - Panel facilitators, MU Extension
Brian and Dianna Koenig – Perry Dean Lukefahr – Perry
Kevin Bachmann – Perry Greg Haertling – Perry

No. 20 1500 crop acres + 130 beef cows ECCB1500
Frank Wideman, Roy Hibbard, and Kate Keeley - Panel facilitators, MU Extension
Marion Brown – Perry Gilbert Besand – Perry
Ronald Gremaud – Perry Charles Hurst – Ste. Genevieve

No. 21 240 crop acres + 250 beef cows — SWCB240
Brian Gillen - Panel facilitator, Lockwood High school Vo-Ag
Randall Erisman – Dade — Chuck Daniel – Dade
Gary Wolf – Lawrence — James Nivens – Lawrence
Steve Allison – Dade

No. 22 1800 acres crops + 150 beef cows — SWCB1800
Jay Chism – Panel facilitator, MU Extension Agronomy Specialist
Rose Ann & Rodney Overman – Barton — Mark Whittle – Barton
Jerry Schnelle – Barton — Russ Massa – Barton

Pork-crop farms

No. 23 1500 sows farrow-to-finish — NEH1500
Jim Fisher – Montgomery — Scott Hays – Monroe
Jerry Epperson – Montgomery — Kathy Chinn – Shelby

No. 24 550 acres crop acres + 70 beef cows + 2 contract nursery pig units — WCHBC550
Wayne Prewitt - Panel facilitator, MU Extension Ag Business Specialist
Gary Waltz – Jasper (retired) — Ronnie Means – Barton
Lawrence Tally – Vernon (retired) — Tommy Wait – Vernon
Bill Handly – Vernon

No. 25 250 crop acres + 125 beef cows + 200 sows farrow-to-finish — CTHBC250
Jeremia Markway - Panel facilitator, Fatima High school Adult Ag Instructor
Leo Brandt – Osage — John Muenks – Osage
Luke Deeken – Osage — Doug Luebbering – Cole

No. 26 1250 sows, farrow-to-finish — CTH1250
Don Nicodim - Panel facilitator, Executive Vice President, Missouri Pork Association
Paul Benedick – Saline — Phil Howerton – Johnson
Marty Phillips – Cass — Brent Sandidge – Saline
Leroy Vollmer – Cooper

Beef farms

No. 27 1560 forage acres + 400 beef cows — CTBF400
Ted Cunningham - Panel facilitator, MU Extension Livestock Specialist
Ken Lenox – Phelps — Paul Heithold – Dent
George Barnitz – Dent

No. 28 735 forage acres + 200 beef cows — SWBF200
Tony Rickard - Panel facilitator, MU Extension Dairy Specialist
Eugene Miekley – Barry — Basil Ferguson – Newton
Larry Henbest – Barry — Kent Arnaud – Barry
Jerry Davis – Barry (retired)

No. 29 935 forage acres + 260 beef cows + backgrounding — SWBF260
Eldon Cole - Panel facilitator, MU Extension Livestock Specialist
Rod Lewis – Lawrence — Ben Kaal – Lawrence
Nolan Kleiboeker - Newton — Steve Parker – Lawrence

No. 30 1850 forage acres + 350 beef cows — SCBF350
Stacy Hambleton - Panel facilitator, MU Extension Ag Business Specialist
Carol Grimes – Oregon — George Sofianek - Oregon
Wilbur Spreutels – Oregon — Don Johnson – Oregon

No. 31 650 forage acres + 150 beef cows — SCBF150
Randy Saner - Panel facilitator, MU Extension Livestock Specialist
Cindy Ulm – Howell — Don Proffitt – Howell
Becky Day – Howell — Charlie Rymer – Howell
Al Vance – Howell — J.W. Phillips - Howell

Dairy farms

No. 32 150 cows + 350 forage acres + 240 acres crops — ECDY150
Matt Herring and Ken Bolte - Panel facilitators, MU Extension
Charles Rademacher – Gasconade — Eugene Scheer – Franklin
Alfred Brandt – Osage — Daryl Rademacher – Gasconade
Roy Koelling, Jr. – Gasconade (retired)

No. 33 85 cows + 340 forage acres — SWDY85
Stacey Hamilton - Panel facilitator, MU Extension Dairy Specialist
Herb and Deann Dighero - Lawrence — Doug and Marcia Owen – Webster
Robert Hensley – Polk

No. 34 110 cows + 245 forage acres — SWDY110
Tony Rickard - Panel facilitator, MU Extension Dairy Specialist
Rex Henderson – Barry — Robert Pointer - Barry
Phil Schad – Barry — Steve Chapman – Barry
Jerry Varner – Barry

No. 35 400 cows + 600 forage acres — SWDY400
Stacey Hamilton - Panel facilitator, MU Extension Dairy Specialist
Daryl Davis – Greene — Wayne Whitehead – Webster
Steve Gallivan – Dallas — Freddie Martin – Hickory

No. 36 230 cows + 350 forage acres — SWDY230
Stacey Hamilton - Panel facilitator, MU Extension Dairy Specialist
Bernie VanDalfsen – Jasper — Jeff Buckner – Cedar
Charles Fletcher – Barry — Gene Fletcher – Barry
Dale Carter – Wright — Brian Patton – Dade
Kevin Patton – Dade

Broiler-Beef Farms

No. 37 4 broiler house + 50 beef cows — SWBRBF4
Jim Durham - Panel facilitator, Simmons Foods
Jerry Evans – Newton — Bill Wilson – McDonald
Murphy Biglow – McDonald

No. 38 6 broiler houses + 50 beef cows — SWBRBF6
Mike Lucareillo - Panel facilitator, Tyson Foods
David Brittenham – Lawrence — Cliff Fitchpatrick – Newton
Ron Campbell – Lawrence — Roger Schnake – Lawrence

APPENDIX C
Panel Updates

Since publication of the most recent baseline outlook in April of 2006, face-to-face interviews have been held with the following panels. Farm panels meet on a two-year schedule to ensure the representative farm remains an appropriate model of the panel member's farm businesses. At each update meeting, data is reviewed to re-validate simulation prices, production, practices, and costs. Potential changes may be structural, such as changes in size or ownership. No major changes were made in the last round of update meetings. Farms are removed from the database when it can not be confirmed that the representative farm continues to reflect the panel, often due to the time interval between interviews. Removal from the database may be temporary.

Table C.1. Database updates April 2006-March 2007

Farm Number	Farm Code	Region	Farm Type
		New rep farm panels	
3	NCFG890	North Central	Feedgrain
7	NEFG2300	North East	Feedgrain
20	ECCB1500	East Central	Crop-Beef
		Panels re-validating model data (prices, production, costs, etc.)	
9	WCFG1800	West Central	Feedgrain
10	SWFG1100	South West	Feedgrain
11	SECT1600	South East	Cotton-Rice
12	SERC2000	South East	Cotton-Rice
13	SERC4000	South East	Cotton-Rice
16	NECB1460	North East	Crop-Beef
18	WCCB1400	West Central	Crop-Beef
19	ECCB380	East Central	Crop-Beef
22	SWCB1800	South West	Crop-Beef
24	WCHBC550	West Central	Pork-Beef-Crops
28	SWBF200	South West	Beef
29	SWBF260	South West	Beef
30	SCBF350	South Central	Beef
31	SCBF150	South Central	Beef
32	ECDY150	East Central	Dairy
34	SWDY110	South West	Dairy
		Farm removed from this baseline	
	SCDY150	South Central	Dairy

APPENDIX D

Missouri Yield History

USDA-NASS data, 2006 preliminary

	2002	2003	2004	2005	2006	Avg.
Corn, bu						
Northwest	91.2	94.7	163.3	136.7	141.0	125.4
North Central	114.4	97.4	161.5	109.9	147.0	126.0
Northeast	95.2	113.6	168.6	67.8	137.0	116.4
West	99.4	79.3	155.4	115.6	117.0	113.3
Central	107.5	95.1	167.6	92.7	127.0	118.0
East	89.4	116.7	152.9	95.8	130.0	117.0
Southwest	117.0	108.8	144.9	91.1	124.0	117.2
South Central	103.8	117.1	137.9	120.5	127.0	121.3
Southeast	145.0	151.8	161.5	143.7	161.0	152.6
State Total	105.0	108.0	162.0	111.0	138.0	124.8
Sorghum, bu						
Northwest	90.0	60.0	87.1	84.6	77.0	79.7
North Central	92.9	60.0	104.0	85.7	110.0	90.5
Northeast	107.4	91.0	126.9	74.0	95.0	98.9
West	63.2	61.3	100.9	76.1	70.0	74.3
Central	86.9	62.1	106.6	67.0	72.0	78.9
East	80.6	78.3	109.5	74.9	89.0	86.5
Southwest	82.8	75.7	105.2	66.0	61.0	78.1
South Central	81.7	60.0	61.5	68.7	76.0	69.6
Southeast	80.2	84.7	95.0	83.3	84.0	85.4
State Total	85.0	77.0	108.0	76.0	85.0	86.2
Soybeans, bu						
Northwest	31.6	25.7	47.8	45.0	42.0	38.4
North Central	37.4	24.9	46.0	37.1	41.0	37.3
Northeast	38.7	32.1	49.3	33.5	40.0	38.7
West	26.2	21.9	46.8	37.6	30.0	32.5
Central	36.2	28.0	48.7	33.4	34.0	36.1
East	35.7	34.1	46.9	35.8	38.0	38.1
Southwest	21.9	26.9	40.0	30.8	20.0	27.9
South Central	31.5	31.9	38.6	36.0	31.0	33.8
Southeast	34.8	39.2	42.6	38.2	40.0	39.0
State Total	34.0	29.5	46.7	37.7	38.0	37.2
Wheat, bu						
Northwest	47.7	62.3	53.0	49.8	59.8	54.5
North Central	52.0	65.1	50.0	50.6	61.8	55.9
Northeast	53.1	68.2	57.0	57.9	65.7	60.4
West	41.4	62.9	49.0	50.2	45.5	49.8
Central	43.2	62.7	48.0	50.2	50.4	50.9
East	42.5	55.9	47.0	49.5	50.2	49.0
Southwest	37.8	61.3	47.0	49.1	30.2	45.1
South Central	32.9	47.0	48.0	57.3	48.9	46.8
Southeast	46.9	56.3	57.0	59.2	62.4	56.4
State Total	44.0	61.0	52.0	54.0	54.0	53.0
Cotton, lb	**796**	**862**	**1054**	**970**	**953**	**927**
Rice, cwt	**60.5**	**61.3**	**68.0**	**66.0**	**64.0**	**64.0**

Notes